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19 August 2022
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Le Hunte Properties

Via email: d.harper@lehunte.com.au

Attention: Mr David Harper

Dear Sir

PROPOSED UNIT DEVELOPMENT
LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW

GEOTECHNICAL INVESTIGATION & SLOPE STABILITY RISK ASSESSMENT

We are pleased to forward our geotechnical investigation and slope stability risk assessment for a proposed unit development on Lot 768, DP1119757, on Diggings Terrace, in Thredbo, NSW.

The report outlines the methods and results of field investigations, describes site subsurface conditions, and provides the site classification to AS2870, as well as geotechnical recommendations for site earthworks, structure footings and a qualitative slope instability risk assessment.

The slope instability risk assessment is based on the landslide risk management concepts and guidelines issued by the Australian Geomechanics Journal Vol 35 March 2007 "Practice Note Guidelines for Landslide Risk Management 2007". By these criteria, it was established that the level of risk to be proposed and neighbouring dwellings and to people is "Very Low to Medium", and is no higher than normally acceptable for residential development.

Should you require any further information regarding this report, please do not hesitate to contact our office.

Yours faithfully
ACT Geotechnical Engineers Pty Ltd



Jeremy Murray
Senior Geotechnical Engineer
Director
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LE HUNTE PROPERTIES

PROPOSED UNIT DEVELOPMENT
LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW

GEOTECHNICAL INVESTIGATION & SLOPE STABILITY RISK ASSESSMENT

AUGUST 2022

LE HUNTE PROPERTIES

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LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW

GEOTECHNICAL INVESTIGATION & SLOPE STABILITY RISK ASSESSMENT

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LE HUNTE PROPERTIES

PROPOSED UNIT DEVELOPMENT
LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW

GEOTECHNICAL INVESTIGATION & SLOPE STABILITY RISK ASSESSMENT

1 INTRODUCTION

1.1 Project Description

At the request of Le Hunte Properties, ACT Geotechnical Engineers Pty Ltd carried out a geotechnical investigation and a qualitative slope instability risk assessment for a proposed unit development at Lot 768, DP1119757, at 5 Diggings Terrace, in Thredbo, NSW.

It is understood the project involves the construction of two-storey terraces, two-storey lodges, a carpark and communal facilities. The structures will either be founded close to existing grade, or cut into the sloping site buy up to 3m depth. The architectural plans provided by the client are included in Appendix G. The site is within "Zone G" of the Kosciusko National Parks Alpine Resorts, so under the NSW Department of Planning Geotechnical policy, a geotechnical investigation and slope instability risk assessment is required. The geotechnical advice and recommendations in this report are based on the proposed development as shown in the following documents (which are included in Appendix G):

- Site Survey Plan prepared by Veris, dated November 2021
- Statement of Environmental Effects prepared by SJB Planning dated August 2022
- Architectural plans prepared by DKO Architecture, dated June 2022
- Civil engineering drawings prepared by Sellicks (including cut/fill drawings) dated June 2022
- Landscape Plans prepared by Tait Network, dated July 2022
- Site Environmental Management Plan (SEMP) prepared by Construction Control, July 2022
- Bushfire Assessment Report prepared by GHD dated May 2022
- Biodiversity Development Assessment Report prepared by NGH, dated August 2022

1.2 Scope of Investigation

The aim of the investigation was to:

- Identify subsurface conditions including extent and nature of any fill materials, soil strata, bedrock type and depth, and groundwater presence.
- Provide a site classification to AS2870 "Residential Slabs & Footings".
- Recommend suitable footing systems for the buildings including types, founding depths and allowable bearing pressures.
- Advise on excavation batters support and earth pressures for design of retaining walls.
- Slope instability risk assessment
- Advise on excavation conditions and suitability of excavated materials for use as fill.
- Advise on subgrade preparation and subgrade indicative CBR values for pavement design.
- Provide the earthquake site factor.
- Advise on site drainage, and other relevant geotechnical issues.

The slope stability risk assessment required the development of a qualitative matrix risk assessment to people and property, in accordance with the guidelines of "Landslide Risk Management Concepts and Guidelines", Australian Geomechanics Journal, 2007. In this instance, the residents of the house are considered as "people" and the proposed residences, as well as the surrounding houses were considered as "property".

The slope stability assessment is qualitative, based on the guidelines on landslide risk management published by the Australian Geomechanics Society. Risk assessment involves the following components: (i) Hazard identification, (ii) Likelihood of Hazards Occurring, (iii) Consequences of Hazards, and (iv) Significance of Risks. This uses a matrix approach to determine the risk level of each hazard based on the likelihood and consequences of each hazard occurrence.

1.3 Geotechnical Policy – Kosciuszko Alpine Resorts

Section 4 of "Geotechnical Policy – Kosciuszko Alpine Resorts" by the NSW Department of Infrastructure, Planning and National Resources details the requirements that must be included in a geotechnical report for developments within the designated "G" areas of the Kosciuszko Alpine Resorts. The table below summarises the requirements and the sections within this report that covers those requirements.

Policy Section	Policy Requirement for Inclusion in Geotechnical Report	Section in This Report Covering the Requirement
4.1 (a)	An assessment of the risk posed by all reasonably identifiable geotechnical hazards which have the potential to either individually or cumulatively impact upon people or property upon the site or related land to the proposed development in accordance with the guidelines set out in 'Landslide Risk Management Concepts and Guidelines" published in the Australian Geomechanics Journal, Volume 35 No. 1 of March 2000.	See Section 5 "Slope Instability Risk Assessment".
4.1 (b)	Plans and sections of the site and related land form from survey and field measurements with contours and key features identified, including the locations of the proposed development, buildings/structures on both the subject site and adjoining site, stormwater drainage, sub-surface drainage, water supply and sewerage pipelines, trees, and other identifiable geotechnical hazards.	See Figure 2 "Aerial Photograph" and Figure 3 "Geotechnical Model".
4.1 (c)	Details of all site inspections and site investigations and any other information used in preparation of the geotechnical report. A site inspection is required in all cases. Site investigation may require sub-surface investigation; appropriate investigation may involve boreholes and/or test pit excavations or other methods to adequately assess the geotechnical/geological model for the site.	See Section 2 "Site Description & Geology" and Section 3 "Investigation Methods".
4.1 (d)	Photographs and/or drawings of the site and related land adequately illustrating all geotechnical features referred to in the geotechnical report, as well as the locations of the proposed development.	See Figures 5-8 "Site Photographs" and Figure 2 "Arial Photograph"
4.1 (e)	Presentation of the geological model of the site and related land showing the proposed development, including an analysis of sub-surface conditions, taking into account thickness of the topsoil, colluvium and residual soil layers, depth to underlying bedrock, and the location and depth of groundwater.	See Section 4.1 "Subsurface Conditions", Section 4.2 "Groundwater", and Figure 3 "Subsurface Section AA'"

4.1 (f)	A conclusion as to whether the site is suitable for the development proposed to be carried out either conditionally or unconditionally. This must be in the form of a specific statement that the site is suitable for the development to be carried out, subject to the following conditions:	See Section 5.8 "Suitability of the Proposed Development".
	(i) Conditions to be provided to establish the design parameters, including, but not limited to; footing levels and supporting rock quality, degree of earth and rock cut and fill, recommendations for excavation batters, bearing capacities for use in the design of all structural works including footings, retaining walls, and drainage, signing of Form 2 as the mechanism to check that these parameters have been used and interpreted correctly.	See Section 6 "Discussion & Recommendations".
	(ii) Conditions applying to the detailed design to be undertaken for the construction certificate, including, but not limited to; any structural design relating to the geotechnical aspects of the proposal is to be checked and certified by a suitably qualified and experienced geotechnical engineer, any other design conditions the geotechnical engineer preparing the geotechnical report believes are required in the design phase in order to ensure the design will achieve the "acceptable risk management" level as defined in the policy for potential loss of both property and life, signing of Form 2 as the mechanism to check that these parameters have been used and interpreted correctly.	See Section 6 "Discussion & Recommendations".
	(iii) Conditions applying to the construction phase, including but not limited to; constructed works which require inspection and/or sign off by a suitably qualified and experienced geotechnical engineer. The report must highlight and detail the inspection regime to provide the builder with adequate notification of all necessary inspections, any other construction conditions including works methodology and temporary works that the geotechnical engineer preparing the geotechnical reportbelieves are required in the construction phase to ensure the design will achieve "acceptable risk management" level as defined by the policy for potential loss of both property and life, and signing of Form 3 as the mechanism to check that these parameters have been used and interpreted correctly.	See Section 6.9 "Hold Points for Geotechnical Inspections".
	(iv) Conditions regarding ongoing management of the site/structure, including but not limited to; any conditions that may be required for the ongoing mitigation and maintenance of the site and the proposal, from a geotechnical viewpoint. (v)	See Section 6.5 "Stable Cut/Fill Battered Slopes" and Section 6.8 "Drainage".
4.1 (g)	A copy of Form 1 bearing the original signature of the geotechnical engineer as defined by this policy, who has either prepared or technically verified the geotechnical report.	See Appendix F "Form 1 – Declaration by geotechnical engineer".

2 SITE DESCRIPTION & GEOLOGY

The 5035m^2 site located on 768, DP1119757, 5 Diggings Terrace, in Thredbo, NSW is presently undeveloped, and the ground surface of the site is grass-covered with Snow Gum trees present. The site dips steeply north at about 25 degrees, from ~RL1392 along the southern boundary, down to ~RL1380 along the northern boundary. Figure 1 shows the site locality, while Figure 2 is a recent aerial photograph showing the present site layout and the locations of the test pits excavated. Figure 3 is an aerial photograph showing some groundsurface conditions and hazards described in Section 5. Figures 4-6 are site photographs, taken at the time of investigation.

The Thredbo area is documented on the NSW Department of Mineral Resources Monaro 1: 500,000 Geological Map (Ref. 1), as underlain by the Kosciuszko Granite Formation of Devonian age. This was formed as a large batholith that cooled deep in the Earth's crust. Processes active in the earth caused this to be forced to the surface, with the overlying rock being subsequently eroded away. During this process, major faults and fractures developed in the granitic rock which became areas of weakness that were more easily eroded than the stronger unaltered rock. The faulted zones have in many cases become drainage pathways, of which the Thredbo River course is one. The elevated topography in the area, combined with high water flows during the snow melt has caused the Thredbo River to cut its way down into the valley, with consequent steep slopes on either side in the vicinity of Thredbo Village.

The bedrock is mainly a granodiorite, but is locally referred to simply as "granite" or "decomposed granite" if more weathered. As is typical for this formation, there are numerous less-weathered corestones or "floaters" and surface boulders which are surrounded by decomposed granite. These boulders have often become more concentrated in watercourses where soil and finer gravel has been washed away. The massive bedrock often has joints which can contain water, resulting in localised deep weathering, and springs on the slopes.

The upper subsurface profile typically comprises loose black topsoil, ~0.1m to 0.5m thick, often containing granitic cobbles and boulders, then loose to medium dense colluvial soil, and then medium dense to dense residual soils typically to between 1m to 2m depth. Extremely weak, extremely weathered (EW) massive granite underlies the soil, and may contain corestones of less-weathered rock to large boulder size. Wet zones can be present in the colluvium in particular, and there are often aquifers or seepage zones associated with rock jointing or sheet flows over less-weathered bedrock, especially after rain.

3 INVESTIGATION METHODS

The field investigation was carried out on 26 October 2021 and comprised nine (9) test pits, designated TP1 to TP9, dug by a 5T excavator. The test pit locations are shown on Figure 2, and the test pit logs are presented in Appendix A.

The test pits were excavated to 1.6m/2.6m depth, terminating at refusal in either weathered granite bedrock or granitic cobbles. The soil profiles were visually logged in accordance with the Unified Soil Classification System (USCS). Definitions of terms used on the logs and in this report, including a copy of the USCS chart, are provided in Appendix B. The stability assessment is a qualitative slope instability assessment, in line with the requirements of the NSW DIPNR, and is based on the guidelines on the AGS "Landslide Risk Management Concepts and Guidelines 2007". (Reference 2).

4 INVESTIGATION RESULTS

4.1 Subsurface Conditions

Test pits TP1 to TP9 found the following subsurface profile:

Geological Profile	Depth Interval	Description
TOPSOIL	0m to 0.3m/0.8m	GRAVELLY SILTY SAND & SILTY SAND; fine to coarse sand, low plasticity fines, some angular granitic gravels to 30mm, dark brown, black, some tree and grass roots, dry to moist, moist, loose & loose/medium dense.
COLLUVIAL/ RESIDUAL SOIL	0.3m/0.8m to 1.0m/1.95m	GRAVELLY CLAYEY SAND & SANDY CLAYEY GRAVEL; fine to coarse sand, low plasticity clay, angular granite gravels and cobbles to 30cm size, pale grey, pale brown, moist, moist to wet, medium dense, dense.
BEDROCK	1m/1.95m to below 2.6m	EW/HW GRANITE; extremely to highly weathered (EW/HW), weak to medium strong rock.

Weathered bedrock was encountered in all test pits, except TP2 where bucket refusal on cobbles/boulders occurred. The depth to EW bedrock varied from 1m to 1.95m depth. The bedrock comprised of extremely to highly weathered (EW/HW), and weak to medium strong granitic rock.

Figure 4 is a subsurface section through the site, showing the geotechnical model of the site as found by the investigation boreholes.

4.2 Groundwater

Permanent groundwater was not encountered in the test pits, however, the colluvial/residual soils were moist and moist to wet which can indicate temporal seepages. Generally, permanent groundwater is not expected within at least 3m of the surface. Groundwater was measured to be deeper that 5m in a monitoring borehole approximately 20m south from the southern site boundary

There is a groundwater discharge area (spring), approximately 100m south-east, where standing water was observed near the surface on the depth 0.2m in a monitoring borehole. In addition, a shallow dry creek runs across the site and ends in the storm water drain on the northern border of the site. The creek does not have evident topographic profile and was dry on the day of fieldwork.

Considering all mentioned above, the site is not sufficiently drained. There is a shallow drainage gully located near Alpine Way, approximately 100 m centre, above the spring on the slope (Figure 5). Additional horizontal drains are installed on the western and eastern sides of the block. On the day of inspection, all drains were full with water.

The general surface and subsurface drainage of the Thredbo Village hillside has been upgraded since the 1997 Thredbo Landslide with major drainage being installed along the Alpine Way. Noted drainage includes a subsoil drain ~2m deep, with slotted agricultural pipe and backfilled with gravel.

5 SLOPE INSTABILITY RISK ASSESSMENT

5.1 Method of Risk Assessment

The following sections of the report outline the slope instability risk assessment carried out for the site. The assessment is qualitative, based on the guidelines provided in the Australian Geomechanics Journal Vol 42 March 2007, and has been adopted by the NSW Department of Infrastructure, Planning and Natural Resources. This uses a matrix approach to determine the risk level of each hazard based on the likelihood and consequences of each hazard occurring.

Risk assessment involves the following components:

(i) Identification on the potential site slope hazards that may damage property and/or cause loss of life (Hazard Identification).

(ii) Estimation of the likelihood of each hazard occurring (Likelihood of Hazards Occurring).

(iii) Assessment of the potential consequences to property and people of these hazards occurring (Consequences of Hazards).

(iv) Evaluation of the significance of the assessed risks against criteria of acceptability (Significance of Risks).

Following the risk assessment, options for the treatment of the risk are provided as a guide to the owner, administrator and regulatory authorities who will need to decide whether to avoid or accept the risk, or to treat the site to reduce the likelihood and/or consequences of the hazards.

A flowchart, included in the Australian Geomechanics Journal, Vol 42, March 2007, paper on "Landslide Risk Management Concept & Guidelines" 2007 (Reference 3), which shows the processes of risk assessment/risk management is copied here in Appendix D. Appendix E provides guidelines for hillside construction.

5.2 Hazard Identification

The potential hazards (in the present condition, during construction, and post-construction) to slope stability at this site were considered, and include:

- Large Scale Transitional Slide
- Small Scale Slumps in the Soil Profile
- Failure of a Retaining Wall
- Surface Erosion
- Failure of Cut Batters (during and post-construction)
- Large Rockfall from Upslope

5.3 Likelihood of Hazards Occurring

5.3.1 Large Scale Translational Slide

The Thredbo Alpine Resort is located in an area where landslip and/or subsidence has occurred or land stability has previously occurred. There is history of severe embankment stability, rock fall, debris slide and debris flow problems in the Thredbo valley.

To our knowledge, no landslips have been recorded in this immediate vicinity. Other landslides that have occurred in the Thredbo area have generally been triggered by changes in the slope (cut or fill) or changes in the drainage, combined with heavy rainfall.

The combination of steep slopes dipping to the north-west at 20-25˚, some recent vegetation clearing and insufficient surface drainage increasing the possibility of landslip occurring. Some factors reducing the risk of a major landslide factors include a relatively shallow soil profile (1m/2m to weathered bedrock) with some mature trees remaining.

The existing trees on the slope are vertical, indicating no recent slope movement. For such a large-scale slide to happen there would need to be an extreme combination of unfavourable triggering conditions such as earthquakes, extreme rainfall, saturated soils, mass clearance of vegetation, unsupported excavations etc. The site is located in an area designated as having a Landslide Susceptibility rating of "Possible". In accordance with the AGS ratings (Appendix C), such an event is considered to be "Possible".

5.3.2 Small-Scale Slumps in the Soil Profile

Under adverse site conditions, such as when site soils are saturated, small slumping failures of the soils could conceivably occur. The existing ground surface exposed small recent translational/rotational soil slides. At least two soil slides were observed on the block and one soil slide just above the site. The soil movements was estimated to be 0.5 to 1m and assessed by exposed soil (Figure 5). The slides were approximately from 3m to 5m in length. The ground surface is also 'lumpy', indicating that slumps may have occurred in the past, so such an event is "Likely"

5.3.3 Failure of Retaining Wall

The cuts to be constructed on the block will be supported by properly designed and constructed engineered retaining walls. As no failures or cracking was observed on similar retaining walls on the adjacent blocks, the likelihood or a properly drained and constructed retaining wall failure is judged to be "Rare".

5.3.4 Surface Erosion

There are some signs of soil creep and frost heaving on site that facilitate surface erosion by exposing soils and moved 'rupturing' grass-covered areas (Figures 6 and 7). At least 5-10% of the site ground surface is not covered by vegetation. The surface erosion was probably enhanced after the site was partially cleared of the mature trees in the past. In addition, the upper soils are quite silty and surface water flow-paths are allowed to develop, therefore, surface erosion is "Likely".

5.3.5 Failure of a Cut Batter

Excavations to ~3m depth will be required for the development. The cuts will be permanently supported by properly designed and constructed engineered retaining walls, however, temporary site cuts will be exposed during construction until the retaining walls can be constructed. The likelihood of a failure of a temporary site cut during construction is judged to be "Possible".

5.3.6 Large Rockfall from Upslope

Large rockfalls from up the slope could have occurred in the past, as evidence by debris deposits on the lower slopes of the valley. However, given most of the boulders uphill of the site are currently partially covered with soils (Figure 7), this risk is reduced. Therefore, this event is "Possible".

5.4 Consequences of Hazards Occurring

5.4.1 Large-Scale Translational Slide

Theoretically, a large-scale slide would occur with little or no warning, and the consequences to property and people would depend on the volume of the slide material, its velocity, and whether or not people are present, or in the downslope dwelling at the time. Using the AGS table of qualitative measures of vulnerability and consequences in Appendix C, we consider the consequences of such a rare event to be "Medium", i.e Theoretically, there is the possibility of a fatality in the dwelling and/or the imposition of moderate damage to some of the structure in the rare even of this occurring.

5.4.2 Small-Scale Slumps in the Soil Profile

The consequence to the dwelling and associated structures of a small-scale slump and soil slides occurring in the soil after the new footings have been founded in bedrock is believed to be "Minor". However, the slope uphill or downhill might be affected, and some material may slough onto the dwelling or downslope dwelling. The chance or temporal probability of persons being in the area during an earth slump is low, and therefore the risk of loss of life is low. The consequences for both property and persons are therefore rated as "Minor".

5.4.3 Failure of a Retaining Wall

If a retaining wall failed, damage may well result to the dwelling, depending on many factors. In general, the consequences can be rated as "Minor to Medium". The chance of persons being injured or of loss of life is low and the consequences to persons are therefore also rated as "Minor to Medium".

5.4.4 Surface Erosion

If such an event develops and occurs, small cobbles/boulders may wash out of erosion gully slides and rolled downhill. The consequential damage to a structure would be "Insignificant".

5.4.5 Failure of a Cut Batter

If a temporary site cut failed during construction, the chance of a construction worker being injured or of loss of life is moderate. The failure of a temporary site cut would typically result in a small-scale slump in the soil zone, which could injure a construction worker who is working in the vicinity. Therefore, the consequences to persons are rated as "Major".

5.4.6 Large Rockfall from Upslope

The top of the escarpment is approximately >1.5km north of the property, with at least 330m of tree-dense bushland within the immediate vicinity of the property. Therefore, any large rockfalls that do occur will have slowed in velocity and magnitude by the time it reaches the property, or be protected by the properties immediately uphill. Therefore, the consequences to people and property are considered as "Minor" to "Insignificant".

5.5 Risk Estimation

A summary of estimated risk to property and life for each of the potential hazards identified in the previous sections is provided in Table 1a. This risk assessment in Table 1a is based on the present conditions, prior to any mitigation measures being implemented. The resulting risk level was derived using the AGS risk analysis matrix presented in Appendix C.

TABLE 1a
Risk Analysis Summary – Prior to Any Mitigation Measures Being Implemented

Potential Hazard	Assessed Likelihood	Assessed Consequences	Risk Level
Large-Scale Translational Slide	Possible	To Dwelling - Medium	Medium
		To People in/adjacent to dwelling - Medium	Medium
Small-Scale Slumps in Soil	Likely	To Dwelling - Minor	Medium
		To People in/adjacent to dwelling - Minor	Medium
Failure of Retaining Wall	Rare	To Dwelling – Minor to Medium	Low
		To People in/adjacent to dwelling - Minor	Very Low
Surface Erosion	Likely	To Dwelling - Insignificant	Low
		To People in/adjacent to dwelling - Insignificant	Low
Cut Batter	Possible	To construction workers - Major	High
Rockfalls	Possible	Minor/Insignificant	Very Low to Medium

5.6 Risk Treatment

To maintain and/or reduce the risk level of slope stability during the construction of the dwelling and associated structures and subsequent occupation, the following measures are recommended to be implemented:

- Ensure footings are founded into weathered bedrock.
- All retaining walls should be properly designed and constructed, and positively drained.
- Install and maintain adequate drainage of the site and ensure drains are free-flowing.
- Where possible, maintain the existing vegetation cover or provide erosion protection.
- Periodic inspection of the slope uphill for signs of erosion developing, and remediate as necessary.
- During construction, all temporary site cuts must be battered back to a stable angle (See Section 6.5). If space restrictions prevent battering back to a stable angle, then temporary excavation support systems (shoring such as soldier pile walls) must be implemented.

Some useful guidelines on hillside construction, prepared by the Australian Geomechanics Society (Reference 3), are presented in Appendix E.

A summary of estimated risk to property and life for each of the potential hazards identified in the previous sections is provided in Table 1b. This risk assessment in Table 1b is based on the proposed future conditions, assuming that all recommended mitigation measures are implemented. For this risk assessment to be valid, a suitably qualified geotechnical engineer must sign Form 2 and Form 3 as the mechanism to check that these mitigation measures have been correctly incorporated into the design and constructed correctly. The resulting risk level was derived using the AGS risk analysis matrix presented in Appendix C.

TABLE 1b
Risk Analysis Summary – After Recommended Mitigation Measures Are Implemented

Potential Hazard	Assessed Likelihood	Assessed Consequences	Risk Level
Large-Scale Translational Slide	Unlikely	To Dwelling - Medium	Low
		To People in/adjacent to dwelling - Minor	Low
Small-Scale Slumps in Soil	Rare	To Dwelling - Minor	Very Low
		To People in/adjacent to dwelling - Insignificant	Low
Failure of Retaining Wall	Rare	To Dwelling – Minor to Medium	Low
		To People in/adjacent to dwelling - Minor	Very Low
Surface Erosion	Rare	To Dwelling - Insignificant	Very Low
		To People in/adjacent to dwelling - Insignificant	Low
Cut Batter	Unlikely	To construction workers - Minor	Low
Rockfalls	Unlikely	Minor/Insignificant	Very Low to Low

Note: This risk assessment in Table 1b is based on the assumed future conditions, assuming that all recommended mitigation measures are implemented. For this risk assessment to be valid, a suitably qualified geotechnical engineer must sign Form 2 and Form 3 as the mechanism to check that these mitigation measures have been correctly incorporated into the design and constructed correctly.

5.7 Significance of Risks (Risk Evaluation)

Risk evaluation is the process by which owners, administrators and relevant regulatory authorities can decide whether the potential risks (See Table 1a and Table 1b) are acceptable, and/or whether these can be feasibly eliminated or reduced by remedial treatment. Implications of each level of risk are described in Appendix C.

In the present conditions, the overall risk to property and people is assessed to be "Very Low" to "Medium" (See Table 1a). Provided design and construction of the units is undertaken in accordance with accepted procedures for hillside construction, and treatments and mitigation measures are carried out to reduce the potential hazards (as recommended in Section 5.6 and Section 6), the risk is assessed to be "Very Low" to "Low" (See Table 1b).

5.8 Suitability of the Proposed Development

Provided that the design and construction of the units is undertaken in accordance with accepted procedures for hillside construction, and treatments and mitigation measures are carried out to reduce the potential hazards (as recommended in Section 5.6 and Section 6), the risk is assessed to be "Very Low" to "Low" (See Table 1b). Therefore, it is assessed that the site is suitable for the proposed residential unit development (provided all the recommendations in our report are followed).

6 DISCUSSION & RECOMMENDATIONS

Geotechnical recommendations for design and construction of the proposed development are provided in the following sections. After the structural and civil design is complete, a suitably qualified geotechnical engineer must review the design and sign Form 2 as the mechanism to check that these design recommendations and slope stability mitigation measures have been correctly incorporated into the design.

6.1 Site Classification

The upper (low plasticity) soil is moderately reactive in terms of potential shrink-swell movements that may occur due to seasonal ground moisture changes. The characteristic ground surface movement "ys", as defined by AS2870 for the range of extreme dry to extreme wet ground moisture conditions is estimated to be between 20mm and 40mm. The site is therefore a Class "M" (moderately reactive).

Deemed-to-comply footing designs provided by AS2870 are applicable specifically to residential-style one and two-storey structures, or buildings with similar loads and superstructure stiffness.

6.2 Building Footings & Ground Slabs

It is recommended that all footings are founded in EW granitic bedrock, which is expected at ~1m/2m depth below existing ground surface. Smaller facilities (waste enclosures, etc.) could be founded in dense colluvial/residual soils. It is understood that the two-storey terraces on lower slope will be cut by up to 3m depth into the sloping site, and the foundation is expected to expose colluvial soils and EW bedrock. Therefore, suitable footings for the two-storey terraces at floor level include pads/strips founding in EW bedrock. Located on upper hill, the proposed two-storey structurescan be founded on bored piers founding in the EW bedrock. Given the potential presence of floaters, bulk/bucket piers may be more practical than bored piers. All footings should be taken below any topsoil and/or disturbed ground.

If designing footings based on engineering principles, recommended allowable end-bearing pressures for various footing systems and likely foundation materials are provided in Table 2, below.

TABLE 2

Recommended Allowable End-Bearing Pressures for Footings

Foundation Material Type	Depth Below Existing Surface	Allowable End-Bearing Pressure	
		Strips	Pads/Piers
Newly Constructed Controlled Fill	-	100kPa	125kPa
Medium Dense/Dense Colluvial Soil	0.6m/>2.3m	125kPa	150kPa
Weathered Granite Bedrock	~1m/2m/>2.3m	600kPa	1000kPa

All footings should be inspected and approved by an experienced geotechnical engineer to confirm the foundation material and design values, and to ensure the excavations are clean and stable.

Groundslabs can be constructed on the natural soils or newly placed controlled fill, following the removal of any silty topsoil material. Following excavation to required level, slab areas on soil should be proof-rolled by a pad foot roller to check for any weak, wet or deforming soils that may require replacement. Suitable replacement fill should be compacted in not thicker than 150mm layers to not less than 95%ModMDD at about OMC.

If required for design of ground slabs, a modulus of subgrade reaction of 50kPa/mm can be assumed for a natural soil or controlled fill foundation, and 100kPa/mm for a cut bedrock foundation.

6.3 Excavation Conditions & Use of Excavated Material

Excavations of up to ~3m depth have been indicated, and would be through topsoil and colluvial/residual soils and into EW and EW/HW granite bedrock. The soils and any weak rock (EW/HW) are readily diggable by backhoe and medium sized excavator to ~3m depth. However, it should be noted that boulders and cobbles could make drilling of bored pile footings difficult. Therefore, bucket/bulk piers may be more practical.

The low and medium plasticity colluvial/residual soils can be used in controlled fill construction of building platforms. The weathered granite bedrock is also suitable for fill material, although rock particles should be broken down to <75mm size. The silty topsoil and slopewash material and any high plasticity clay should not be used in controlled fill construction, but could be used in non-structural applications such as landscaping.

If imported fill is required, a suitable select fill material would include a low or medium plasticity soil such as clayey sand or gravelly clayey sand, containing between 25% and 50% fines less than 0.075mm size (silt and clay), and no particles greater than 75mm size.

6.4 Controlled Fill Construction

For construction of any new fill foundation platforms and road subgrades, it is recommended that:

- Areas be fully stripped of all silty topsoil and any uncontrolled fill. A stripping depth of up to ~0.9m may be required. Stripped foundations should be proof-rolled by a vibratory pad-foot roller of not less than 9 tonne static mass to check for any weak or wet areas that would require replacement. No fill should be placed until a geotechnical engineer has confirmed the suitability of the foundation.

- Controlled fill comprising suitable site excavated or imported materials of not greater than 75mm maximum particle size (Section 5.3), be compacted in not greater than 150mm layers to not less than 95%ModMDD at about OMC.

- Fill placement and control testing be overviewed and certified by a geotechnical engineer at Level 1 or 2 involvement of AS3798 – 1996 "Guidelines on Earthworks for Commercial & Residential Developments" (Reference 3).

6.5 Stable Cut/Fill Batter Slopes

6.5.1 Temporary Batters (During Construction)

Temporary site excavations to 1.5m depth should be cut back at no steeper than 1(H):1(V). If required and space allows, deeper temporary cuts can be formed at 1(H):1(V) in soils and at 0.5(H):1(V) in weathered granite bedrock. A geotechnical engineer should inspect all cut batters during construction to confirm stability. Exposed temporary batters should be protected from the weather by black plastic pinned to the face with link-wire mesh, or similar.

During construction, the following recommendations must be followed to maintain stability of all temporary unsupported excavations:

- All equipment/machinery/stockpiles/site sheds and containers are located 1(H):1(V) from the toe of the batters. Trucks and heavy construction plant/equipment and large soil stockpiles must not be located close to the top edge of the batters, especially with the motor idling. Trucks and heavy construction plant/equipment must be located outside the zone of influence (1(H):1(V)) of the excavation batter.

- A bund or dish drain must be constructed along the top edge of all cuts to intercept and divert surface water away from the batters.

- All batter faces must be trimmed when erosion occurs, and loose material cleaned from the face regularly. Therefore, it is recommended that the batter faces are monitored on a daily basis and cleaned of loose material when present.

- Regular inspections by a geotechnical engineer of the batters would be required. As a guide, these inspections by a geotechnical engineer must be conducted on a weekly basis, while a competent person representing the contractor should do daily checks.

- No work must be conducted close to the toe of the batters during rain and 24 hours after. The batters must be re-inspected by a geotechnical engineer following rainfall (about 20mm of rain, or enough rain that the batter faces become wet).

- If deterioration or significant weathering of the batter face occurs, stabilisation/remediation of the batter must be applied. A geotechnical engineer will confirm this recommendation.

6.5.2 Permanent Batters (Post-Construction)

Permanent cut and fill soil batters should be formed at no steeper than 2(H): 1(V). All soil cut and fill surfaces should be protected against erosion by topsoiling and grassing, or other suitable means. Steeper permanent cuts should be supported by structural retaining walls. It is advisable that permanent batters are inspected during excavation by an experienced geotechnical engineer to confirm stability. To reduce the risk of future slope instability, all surface slopes around the development must be maintained to prevent erosion, and regular maintenance and inspections will be required to ensure on-going stability.

6.6 Low Retaining Walls

Retaining walls constructed in open excavation, with the gap between the excavation face and the wall backfilled later, can be designed for an earth pressure distribution given by:

$$\sigma_h = (K\gamma' h) + Kq$$

where,

σ_h is the horizontal earth pressure acting on the back of the wall, in kPa

K is the dimensionless coefficient of earth pressure; this can be assumed to be 0.4 when the top of the wall is unrestrained horizontally, and 0.6 when the top of the wall is restrained (i.e. by building slabs etc.)

γ' is the effective unit weight of the backfill, and can be assumed to be 20kN/m^3 for a lightly compacted soil backfill

h is the height of the backfill, in metres

q is any uniform distributed vertical surcharge acting on the top of the backfill, in kPa

Apart from structural restraints such as floor slabs, resistance to overturning and sliding of retaining walls is provided by frictional and adhesive resistance on the base, and by passive resistance at the toe of the wall. For a natural soil or controlled fill foundation, an ultimate base friction factor (tanδ) of 0.4, base adhesion (c) of 30kPa, and allowable passive earth pressure coefficient Kp=2.5 can be used for calculation of sliding resistance. For a weathered bedrock foundation an ultimate base friction factor (tanδ) of 0.55, base adhesion (c) of 100kPa, and an allowable passive earth pressure coefficient Kp=3.5 can be used for calculation of sliding resistance.

Free-draining granular backfill or synthetic fabric drains should be installed behind all walls. These should connect to weep holes and/or a collector drain, and ultimately to the stormwater system. Granular backfill should be wrapped in a suitable filter fabric to minimise infiltration of silt/clay fines.

6.7 Earthquake Site Factor

Table 2.3 of AS1170.4 "Minimum Design Loads on Structures - Part 4: Earthquake Loads" (Reference 5) lists the earthquake acceleration coefficients for major centres to be considered in structural design. The Thredbo area has an acceleration coefficient of 0.08.

Section 4 of AS1170.4 summarises the Site Subsoil Class which depends on the subsurface conditions at the site in question. A Site Subsoil Class C_e is applicable for this development.

6.8 Drainage

Suitable surface drainage should be provided to ensure rainfall run-off or other surface water cannot pond against buildings or pavements. Suitable drainage must be provided behind retaining walls.

It is strongly recommended to install a deep subsoil drain along the upslope boundary of the property to intercept any subsoil seepages. The drain should extend to EW bedrock or to at least 3m depth and should be directed past the building and into the stormwater system. Depoending on the efficiency of the above recommended subsoil drain, additional horizontal drains may also be required near the proposed buildings. If overland flow is an issue, a swale or bund drain could be constructed upslope to divert water away from the structures.

6.9 Hold Points for Geotechnical Inspections

During construction, a suitably qualified geotechnical engineer must inspect certain structural and civil elements, and sign Form 3 as the mechanism to check that these design recommendations and slope stability mitigation measures have been correctly constructed. The following is a list of hold points that require geotechnical inspection and sign off:

1) A review of all structural and civil design drawings prior to the start of construction to check that our geotechnical design recommendations and slope stability mitigation measures have been interpreted correctly and incorporated into the design correctly. This will require a suitably qualified geotechnical engineer to sign Form 2.

2) Inspect all footing excavations (footings for all structural elements, including column and wall footings, retaining wall footings, lift pits, stair wells, etc.) to check the foundation material is suitable and has the required bearing capacity, and to ensure that all loose material is removed from the base prior to pouring concrete. This will require a suitably qualified geotechnical engineer to sign Form 3.

3) Inspect all temporary and permanent cut and fill batters to check stability and advise on remediation/treatment measures.

4) Inspection and certification of all controlled fill construction (where it is specified to be controlled fill in accordance with AS3798).

5) Inspect all surface and subsurface drainage measures to check that they are adequate, and to advise for additional measures if required.

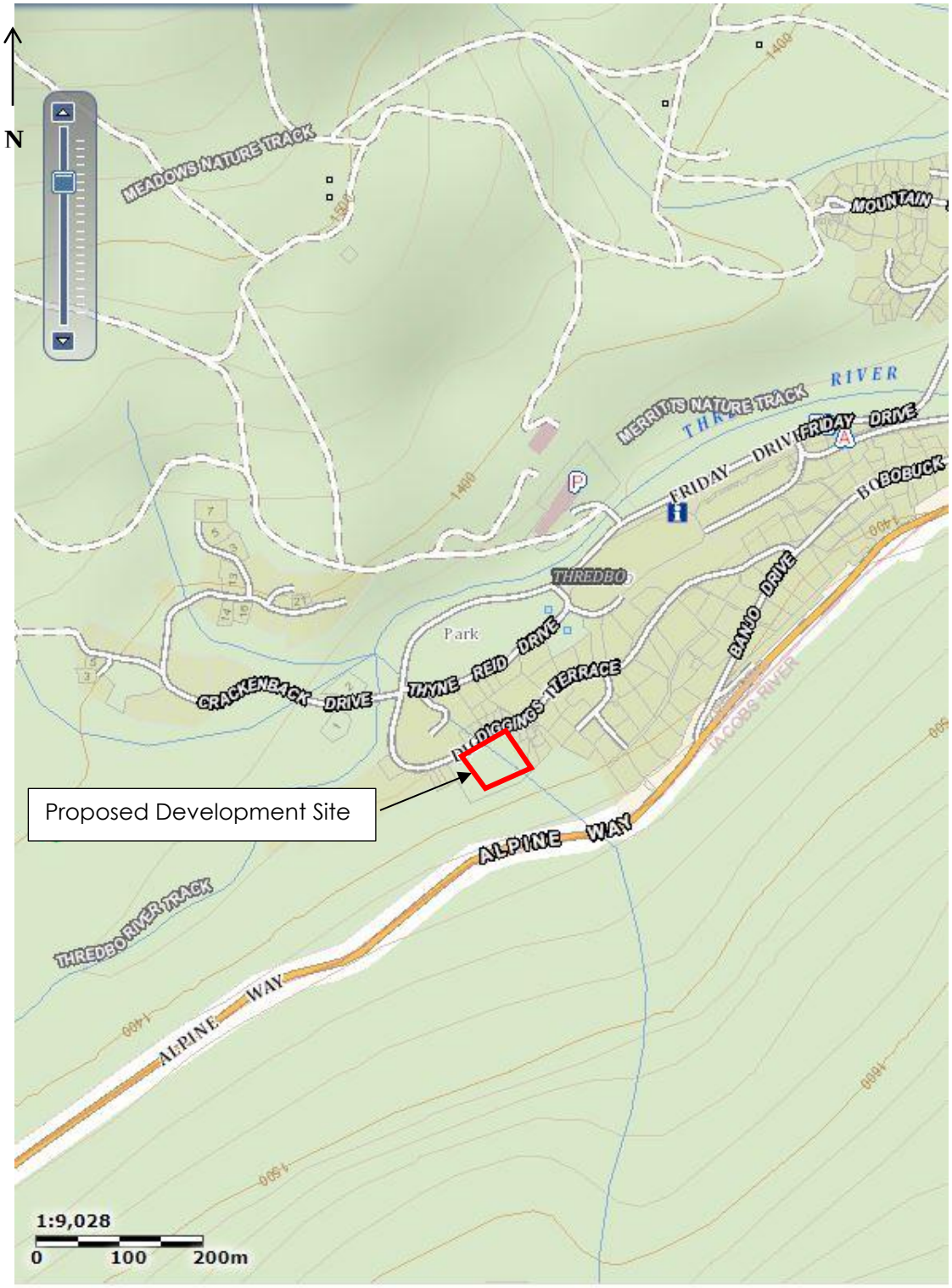
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REFERENCES

1 Bureau of Mineral Resources, Commonwealth of Australia, "Wollongong 1:250 000 Engineering Geology Series", 1985.

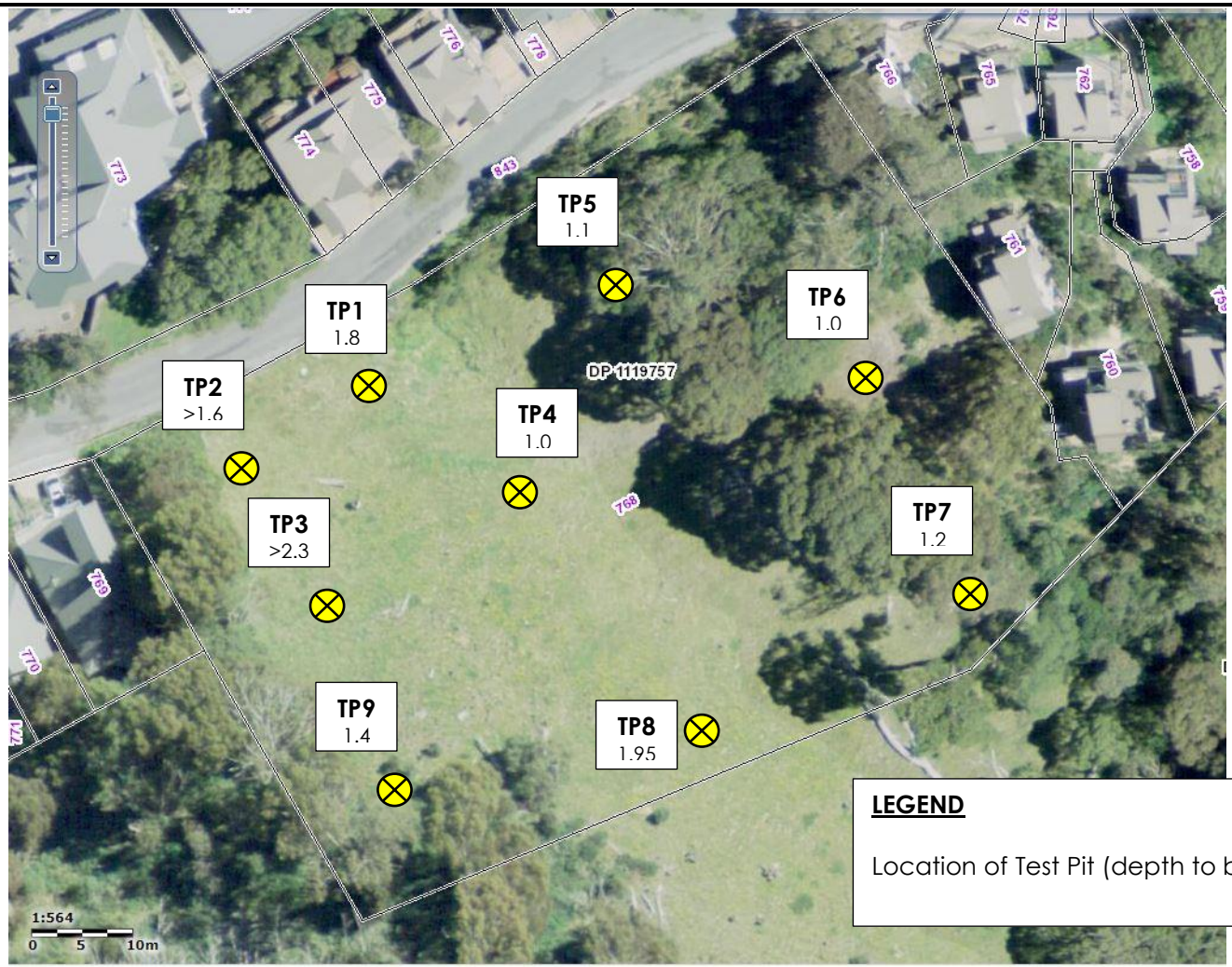
2 Standards Australia, "AS2870 - 1996 - Residential Slabs & Footings - Construction".

3 Standards Australia, "AS1170.4 - 1993 - Minimum Design Loads on Structures - Part 4: Earthquake Loads".



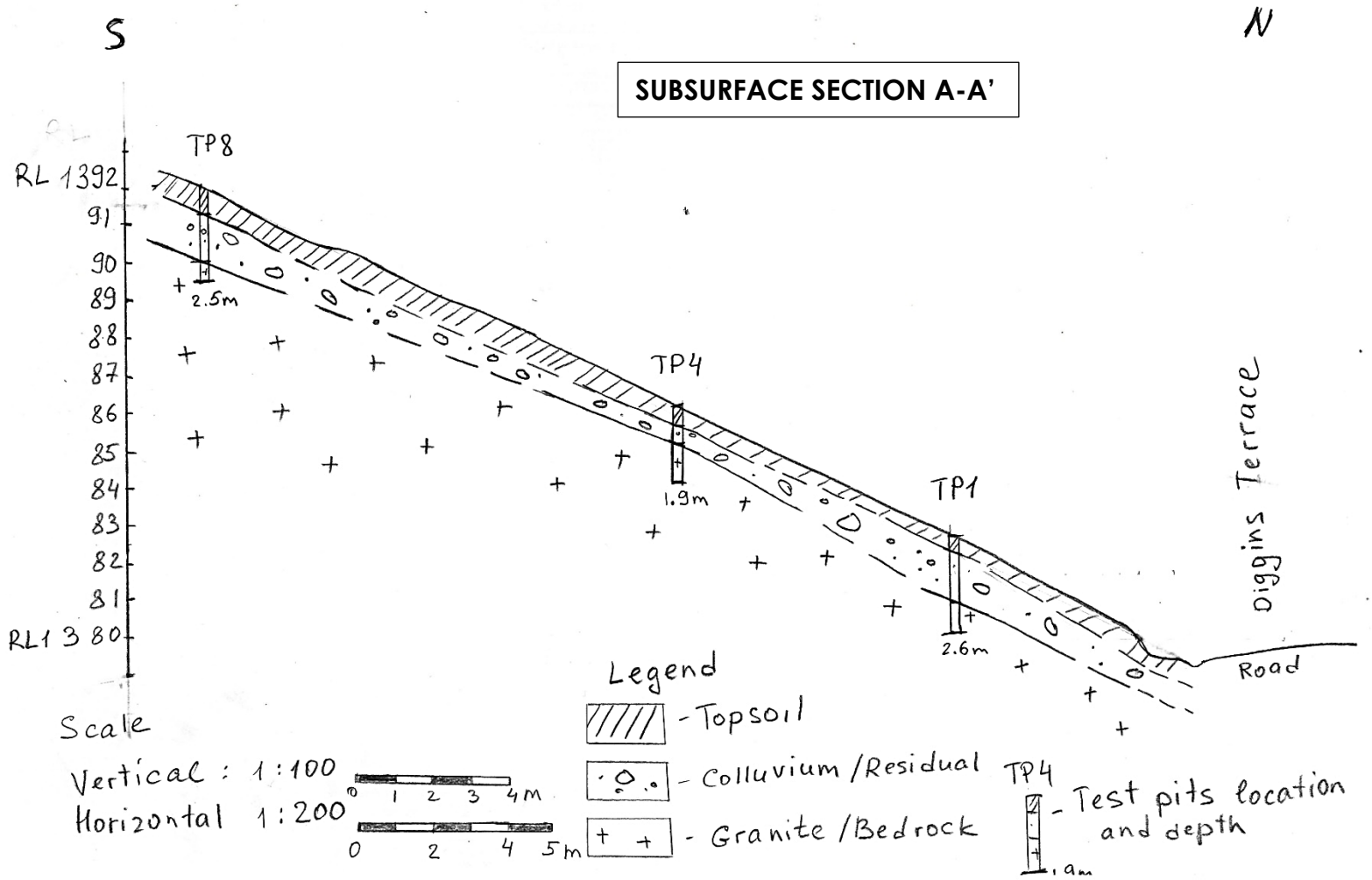
PROPOSED UNIT DEVELOPMENT
LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW
SITE LOCALITY

ACT Geotechnical Engineers Pty Ltd	**C9982**	**FIGURE 1**



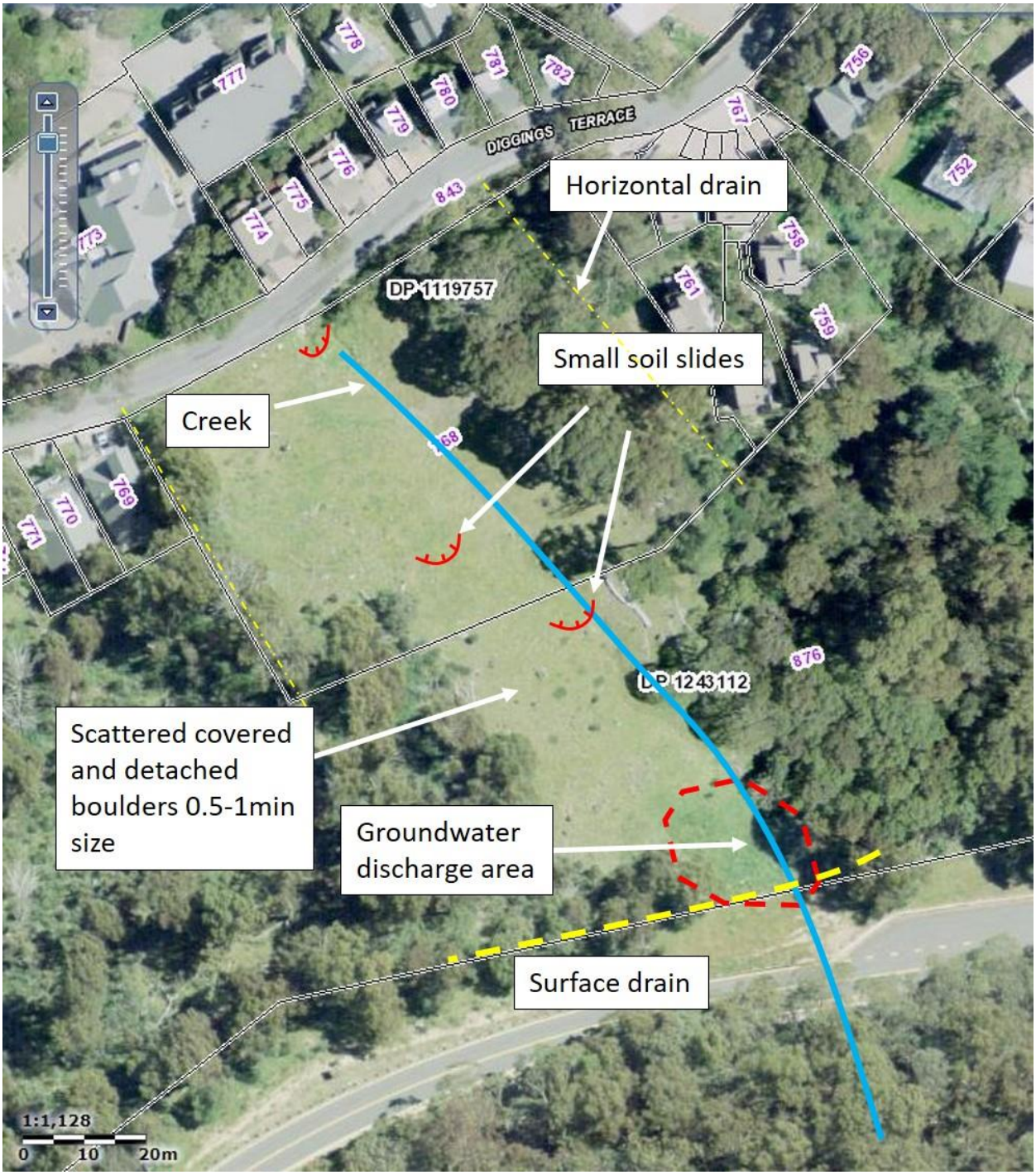
PROPOSED UNIT DEVELOPMENT
LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW
AERIAL PHOTOGRAPH & TEST PIT LOCATIONS

ACT Geotechnical Engineers Pty Ltd	**C12365**	**FIGURE 2**



PROPOSED UNIT DEVELOPMENT
LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW
SITE GEOTECHNOCAL MODEL

ACT Geotechnical Engineers Pty Ltd	**C12365**	**FIGURE 3**



PROPOSED UNIT DEVELOPMENT
LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW
AERIAL PHOTOGRAPH AND A PLAN OF SOME HAZARDS AND SURFACE CONDITIONS

ACT Geotechnical Engineers Pty Ltd	**C12365**	**FIGURE 4**





PROPOSED UNIT DEVELOPMENT
LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW
SITE PHOTOGRAPHS SHOWING MINOR SOIL SLIDES AT THE END OF THE CREEK INTO STORM WATER DRAIN NEAR DIGGINS TERRACE (TOP) AND NEAR TP8 (BOTTOM)

ACT Geotechnical Engineers Pty Ltd	**C12365**	**FIGURE 5**





PROPOSED UNIT DEVELOPMENT
LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW
SITE PHOTOGRAPHS SHOWING EXPOSED SOILS AND GRASS COVER GAPS DUE TO FROST HEAVING AND SOIL CREEP ON SLOPE

ACT Geotechnical Engineers Pty Ltd	**C12365**	**FIGURE 6**





PROPOSED UNIT DEVELOPMENT
LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW
SITE PHOTOGRAPHS OF BOULDERS ON THE SLOPE ABOVE THE SITE (TOP) AND SOIL EROSION NEAR DIGGINGS TERRACE

ACT Geotechnical Engineers Pty Ltd	**C12365**	**FIGURE 7**



PROPOSED UNIT DEVELOPMENT
LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW
SITE PHOTOGRAPH OF SURFACE DRAIN NEAR ALPINE WAY

ACT Geotechnical Engineers Pty Ltd	**C12365**	**FIGURE 8**

APPENDIX A
Test Pits Logs TP1 to TP9

Excavation Log

Excavation No.	**TP1**
Sheet	1 of 1
Job No.	C12365

CLIENT: Le Hunte Properties

PROJECT: GEOTECHNICAL INVESTIGATION
5 Diggings Terrace, Thredbo, NSW

Location : See Figure 1

Surface Level : Not Known

Equipment Type : 5T excavator
Excavation Dimensions : 2x0.8m

Samples	Casing	Depth Metres	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
				SM	Silty SAND; fine to coarse sand, low plasticity, dark brown, grass roots throughtout, some white mica flackes, moist.	LOOSE TO MEDIUM DENSE		TOPSOIL
		0.3		SC	Clayey SAND/Sandy CLAY; fine to coarse sand, low plasticity, brown, fine granite gravel, some granite cobbles to 10cm, moist.	MEDIUM DENSE TO DENSE		COLLUVIAL/RESIDUAL SOIL
		0.6		SW-SC	Gravelly Clayey SAND; fine to coarse sand, fine to medium granite gravel, low plasticity, pale grey, pale brown, some fine-grained mica flackes, moist.	DENSE		
		1.0						
		1.8			EW GRANITE; medium to coarse-grained, extremely weathered (EW), excavates as Gravelly Sand, grey, pale brown, weak rock, moist.	WEAK ROCK		BEDROCK
		2.0						
		2.6			EXCAVATION TERMINATED AT 2.6m Refusal in HW bedrock			
		3.0						

Logged By : OB Date : 26/10/21 Checked By : JM Date : 3/11/21

BOREHOLE/EXCAVATION LOG C12365.GPJ ACT GEO.GDT 2/11/21

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Excavation Log

Excavation No.	**TP2**
Sheet	1 of 1
Job No.	C12365

CLIENT: Le Hunte Properties

PROJECT: GEOTECHNICAL INVESTIGATION
5 Diggings Terrace, Thredbo, NSW

Location : See Figure 1

Surface Level : Not Known

Equipment Type : 5T excavator
Excavation Dimensions : 2x0.8m

Samples	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
		0.0		SM-SW	Gravelly Silty SAND; fine to coarse sand, fine granite gravel, low plasticity, black, grass roots at surface, moist.	MEDIUM DENSE		TOPSOIL
		0.6		SW-SC	Gravelly Clayey SAND; fine to coarse sand, fine to medium granite gravel, low plasticity, pale grey, pale brown, some fine-grained mica flackes, moist.	DENSE		COLLUVIAL/RESIDUAL SOIL
		1.0						
		1.4		GC	Sandy Clayey GRAVEL; fine to coarse sand, low plasticity, fine to coarse granite gravel, MW granite cobbles up to 30cm comprise to 15% of soil mass, moist.	DENSE		
		1.6			EXCAVATION TERMINATED AT 1.6m Refusal on boulders			
		2.0						
		3.0						

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Excavation Log

Excavation No.	**TP3**
Sheet	1 of 1
Job No.	C12365

CLIENT: Le Hunte Properties

PROJECT: GEOTECHNICAL INVESTIGATION
5 Diggings Terrace, Thredbo, NSW

Location : See Figure 1

Surface Level : Not Known

Equipment Type : 5T excavator
Excavation Dimensions : 2x0.8m

Samples		Casing	Depth Metres	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
					SM-SW	Gravelly Silty SAND; fine to coarse sand, fine granite gravel, low plasticity, black, grass roots at surface, moist.	MEDIUM DENSE		TOPSOIL
			0.7		SW-SC	Gravelly Clayey SAND; fine to coarse sand, fine to medium granite gravel, low plasticity, pale grey, pale brown, some fine-grained mica flackes, some SW granite cobbles to 10cm, moist.	DENSE		COLLUVIAL/RESIDUAL SOIL
			1.0						
			2.0		GC	Sandy Clayey GRAVEL; fine to coarse sand, low plasticity, fine to coarse granite gravel, MW granite cobbles up to 30cm comprise to 15% of soil mass, moist.	DENSE TO VERY DENSE		RESIDUAL SOIL/ EWM
			2.3			EXCAVATION TERMINATED AT 2.3m Refusal on boulders/bedrock			
			3.0						

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Excavation Log

Excavation No.	**TP4**
Sheet	1 of 1
Job No.	C12365

CLIENT: Le Hunte Properties

PROJECT: GEOTECHNICAL INVESTIGATION
5 Diggings Terrace, Thredbo, NSW

Location : See Figure 1

Surface Level : Not Known

Equipment Type : 5T excavator
Excavation Dimensions : 2x0.8m

Samples	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
		0.5		SM-SW	Gravelly Silty SAND; fine to coarse sand, fine granite gravel, low plasticity, black, grass roots at surface, moist.	MEDIUM DENSE		TOPSOIL
		1.0		SW-SC	Gravelly Clayey SAND; fine to coarse sand, fine to medium granite gravel, low plasticity, pale grey, pale brown, some fine-grained mica flackes, moist.	DENSE		COLLUVIAL/RESIDUAL SOIL
		1.9			EW GRANITE; medium to coarse-grained, extremely weathered (EW), excavates as Gravelly Sand, grey, pale brown mottled white, weak rock, moist.	WEAK ROCK		BEDROCK
		2.0			EXCAVATION TERMINATED AT 1.9m Refusal in HW bedrock			
		3.0						

Logged By : OB Date : 26/10/21 Checked By : JM Date : 3/11/21

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Excavation Log

Excavation No.	**TP5**
Sheet	1 of 1
Job No.	C12365

CLIENT: Le Hunte Properties

PROJECT: GEOTECHNICAL INVESTIGATION
5 Diggings Terrace, Thredbo, NSW

Location : See Figure 1

Surface Level : Not Known

Equipment Type : 5T excavator
Excavation Dimensions : 2x0.8m

Samples	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
				SM-SW	Gravelly Silty SAND; fine sand, fine granite gravel, low plasticity, black, grass roots at surface, moist.	MEDIUM DENSE		TOPSOIL
		0.5		SW-SC	Gravelly Clayey SAND; fine to coarse sand, fine to medium granite gravel, low plasticity, pale grey, pale brown, some fine-grained mica flackes, one boulder 30cm across, moist.	DENSE		COLLUVIAL/RESIDUAL SOIL
		1.0						
		1.1			EW GRANITE; medium to coarse-grained, extremely weathered (EW), excavates as Gravelly Sand, grey, pale brown mottled white, weak rock, moist.	WEAK ROCK		BEDROCK
		1.7			EXCAVATION TERMINATED AT 1.7m Refusal in HW bedrock			
		2.0						
		3.0						

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Excavation Log

Excavation No.	**TP6**
Sheet	1 of 1
Job No.	C12365

CLIENT: Le Hunte Properties

PROJECT: GEOTECHNICAL INVESTIGATION
5 Diggings Terrace, Thredbo, NSW

Location : See Figure 1

Surface Level : Not Known

Equipment Type : 5T excavator
Excavation Dimensions : 2x0.8m

Samples	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
				SM-SW	Gravelly Silty SAND; fine to coarse sand, fine granite gravel, low plasticity, brown, some tree and grass roots, moist.	LOOSE TO MEDIUM DENSE		TOPSOIL
		0.6		SW-SC	Gravelly Clayey SAND; fine to coarse sand, fine to medium granite gravel, low plasticity, pale grey, pale brown, some fine-grained mica flackes, moist.	DENSE		COLLUVIAL/RESIDUAL SOIL
		1.0			EW GRANITE; medium to coarse-grained, extremely weathered (EW), excavates as Gravelly Sand, grey, pale brown mottled white, weak rock, moist.	WEAK ROCK		BEDROCK
		1.6			HW GRANITE; coarse-grained, highly weathered (HW), grey, pale brown, weak to medium rock, wet.	WEAK TO MEDIUM STRONG ROCK		
		1.7			EXCAVATION TERMINATED AT 1.7m Refusal in HW bedrock			
		2.0						
		3.0						

Logged By : OB Date : 26/10/21 | Checked By : JM Date : 3/11/21

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Excavation Log

Excavation No.	**TP7**
Sheet	1 of 1
Job No.	C12365

CLIENT: Le Hunte Properties

PROJECT: GEOTECHNICAL INVESTIGATION
5 Diggings Terrace, Thredbo, NSW

Location : See Figure 1

Surface Level : Not Known

Equipment Type : 5T excavator
Excavation Dimensions : 2x0.8m

Samples	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
				SM	Silty SAND; fine to coarse sand, low plasticity, dark brown, grass roots throughtout, some white mica flackes, some fine granite gravel, moist.	LOOSE TO MEDIUM DENSE		TOPSOIL
		0.8		SW-SC	Gravelly Clayey SAND; fine to coarse sand, fine to medium granite gravel, low plasticity, pale grey, pale brown, some fine-grained mica flackes, few cobbles to 10cm, moist.	DENSE		COLLUVIAL/RESIDUAL SOIL
		1.0						
		1.2			EW GRANITE; medium to coarse-grained, extremely weathered (EW), excavates as Gravelly Sand, grey, pale brown mottled white, weak rock, moist to wet.	WEAK ROCK		BEDROCK
		2.0						
		2.1			EXCAVATION TERMINATED AT 2.1m Refusal in HW bedrock			
		3.0						

Logged By : OB Date : 26/10/21 Checked By : JM Date : 3/11/21

BOREHOLE/EXCAVATION LOG C12365.GPJ ACT GEO.GDT 2/11/21

ACT Geotechnical Engineers

ACT Geo Engineers

Excavation Log

Excavation No.	**TP8**
Sheet	1 of 1
Job No.	C12365

CLIENT: Le Hunte Properties

PROJECT: GEOTECHNICAL INVESTIGATION
5 Diggings Terrace, Thredbo, NSW

Location : See Figure 1

Surface Level : Not Known

Equipment Type : 5T excavator
Excavation Dimensions : 2x0.8m

Samples	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
				SM-SW	Gravelly Silty SAND; fine to coarse sand, fine granite gravel, low plasticity, brown, grass roots at surface, moist.	LOOSE TO MEDIUM DENSE		TOPSOIL
		0.8		SW-SC	Gravelly Sandy CLAY; fine to coarse sand, fine to medium granite gravel, low plasticity, pale grey, pale brown, some fine-grained mica flackes, few cobbles to 10cm, moist to wet.	FIRM TO STIFF		COLLUVIAL/RESIDUAL SOIL
		1.0						
		1.95						
		2.0			EW GRANITE; medium to coarse-grained, extremely weathered (EW), excavates as Gravelly Sand, grey, pale brown mottled white, weak rock, moist to wet.	WEAK ROCK		BEDROCK
		2.5						
					EXCAVATION TERMINATED AT 2.5m Refusal in HW bedrock			
		3.0						

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Excavation Log

Excavation No.	**TP9**
Sheet	1 of 1
Job No.	C12365

CLIENT: Le Hunte Properties

PROJECT: GEOTECHNICAL INVESTIGATION
5 Diggings Terrace, Thredbo, NSW

Location : See Figure 1

Surface Level : Not Known

Equipment Type : 5T excavator
Excavation Dimensions : 2x0.8m

Samples	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
		0.0		SM-SW	Gravelly Silty SAND; fine to coarse sand, fine granite gravel, low plasticity, brown, grass roots at surface, dry to moist.	LOOSE TO MEDIUM DENSE		TOPSOIL
		0.5		SW-SC	Gravelly Sandy CLAY; fine to coarse sand, fine to medium granite gravel, low plasticity, pale grey, pale brown, some fine-grained mica flackes, few granite cobbles to 30cm, moist to wet.	FIRM TO STIFF		COLLUVIAL/RESIDUAL SOIL
		1.0						
		1.4			EW GRANITE; medium to coarse-grained, extremely weathered (EW), excavates as Gravelly Sand, grey, pale brown mottled white, weak rock, moist to wet.	WEAK ROCK		BEDROCK
		1.9			EXCAVATION TERMINATED AT 1.9m Refusal in HW bedrock			
		2.0						
		3.0						

Logged By : OB Date : 26/10/21 Checked By : JM Date : 3/11/21

BOREHOLE/EXCAVATION LOG C12365.GPJ ACT GEO.GDT 2/11/21

ACT Geotechnical Engineers

ACT Geo Engineers

APPENDIX B
Definitions of Geotechnical Engineering Terms

DESCRIPTION AND CLASSIFICATION OF SOILS

The methods of description and classification of soils used in this report are based on the Australian Standard 1726 – 1993, Geotechnical site investigations. In general, descriptions cover the following properties – soil type, colour, secondary grain size, structure, inclusions, strength or density and geological description.

Soil types are described according to the predominating particle size, qualified by the grading of other particles present (e.g. sandy clay) on the following basis:

Classification	**Particle Size**
Clay	Less than 0.002mm
Silt	0.002mm to 0.06mm
Sand	0.06mm to 2.00mm
Gravel	2.00mm to 60.00mm
Cobbles	60mm (63mm) to 200mm
Boulders	>200mm

Soils are also classified according to the Unified Soil Classifications System which is included in this Appendix. Rock types are classified by their geological names.

Cohesive soils are classified on the basis of strength either by laboratory testing or engineering examination. The terms are defined as follows:

Consistency	**Shear Strength su(kPa) (Representative Undrained Shear)**	
Very soft	< 12	<2 (~SPT "N")
Soft	12 - 25	2-4
Firm	25 - 50	4-8
Stiff	50 – 100	8-15
Very Stiff	100 – 200	15-30
Hard	> 200	>30

Non-cohesive soils are classified on the basis of relative density, generally from the results of in-situ standard penetration tests as below:

Term	**Relative Density (%)**	**SPT Blows/300mm 'N'**
Very loose	< 15	<4
Loose	15-35	4-10
Medium dense	35-65	10-30
Dense	65-85	30-50
Very Dense	>85	>50

SAMPLING

Sampling is carried out during drilling to allow engineering examination (and laboratory testing where required) of soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are generally taken by one of two methods:

1. Driving or pushing a thin walled sample tube into the soil and withdrawing with a sample of soil in a relatively undisturbed state.

2. Core drilling using a retractable inner tube (R.I.T.) core barrel.

Such samples yield information on structure and strength in additions to that obtained from disturbed samples and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Details of the type and method of sampling are given in the report.

PENETRATION TESTING

The relative density of non-cohesive soils is generally assessed by in-situ penetration tests, the most common of which is the standard penetration test. The test procedure is described in Australian Standard 1289 “Testing Soils for Engineering Purposes” Testing Soils for Engineering Purposes” – Test No. F3.1.

The standard penetration test is carried out by driving a 50mm diameter split tube penetrometer of standard dimensions under the impact of a 63 kg hammer having a free fall of 750mm.

The “N” value is determined as the number of blows to achieve 300mm of penetration (generally after disregarding the first 150mm penetration through possibly disturbed material). The results of these tests can be related empirically to the engineering properties of the soil.

The test is also used to provide useful information in cohesive soils under certain conditions, a good quality disturbed sample being recovered with each test. Other forms of in situ testing are used under certain conditions and where this occurs, details are given in the report.

DEFINITIONS OF ROCK, SOIL, AND DEGREES OF CHEMICAL WEATHERING

GENERAL DEFINITIONS – ROCK AND SOIL

ROCK In engineering usage, rock is a natural aggregate of minerals connected by strong and permanent cohesive forces.

Note: Since "strong" and "permanent" are subject to different interpretations, the boundary between rock and soil is necessarily an arbitrary one.

SOIL In engineering usage, soil is a natural aggregate of mineral grains which can be separated by such gentle mechanical means as agitation in water, can be remoulded and can be classified according to the Unified Soil Classification System. Three principal classes of soil recognized are:

Residual soils: soils which have been formed in-situ by the chemical weathering of parent rock. Residual soil may retain evidence of the original rock texture or fabric or, when mature, the original rock texture may be destroyed.

Transported soils: soils which have been moved from their places of origin and deposited elsewhere. The principal agents of erosion, transport and deposition are water, wind and gravity. Two important types of transported soil in engineering geology and materials investigations are:

Colluvium – a soil, often including angular rock fragments and boulders, which has been transported downslope predominantly under the action of gravity assisted by water. The principle forming process is that of soil creep in which the soil moves after it has been weakened by saturation. It may be water borne for short distances.

Alluvium – a soil which has been transported and deposited by running water. The larger particles (sand and gravel size) are water worn.

Lateritic soils: soils which have formed in situ under the effects of tropical weathering include all reddish residual and non residual soils which genetically form a chain of material ranging from decomposed rock through clay to sesqui-oxide rich crusts. The term does not necessarily imply any compositional, textural or morphological definition; all distinctions useful for engineering purposes are based on the differences in geotechnical characteristics.

ROCK WEATHERING DEFINITIONS

Extremely Weathered (EW)	Rock substance affected by weathering to the extent that the rock exhibits soil properties, i.e. it can be remoulded and can be classified according to the Unified Classification System, but the texture of the original rock is still evident.
Highly Weathered (HW)	Rock substance affected by weathering to the extent that limonite staining or bleaching affects the whole of the rock substance and other signs of the chemical or physical decomposition are evident. Porosity and strength may be increased or decreased compared to the fresh rock usually as a result of iron leaching or deposition. The colour and strength of the original fresh rock substance is no longer recognisable.
Moderately Weathered (MW)	Rock substance affected by weathering to the extent that staining extends throughout the whole of the rock substance and the original colour of the fresh rock is no longer recognisable.
Slightly Weathered (SW)	Rock substance affected by weathering to the extent that partial staining or discolouration of the rock substance, usually by limonite, has taken place. The colour and texture of the fresh rock is recognisable.
Fresh (Fr)	Rock substance unaffected by weathering.

The degrees of rock weathering may be gradational. Intermediate stages are described by dual symbols with the prominent degree of weathering first (e.g. EW-HW).

The various degrees of weathering do not necessarily define strength parameters as some rocks are weak, even when fresh, to the extent that they can be broken by hand across the fabric, and some rocks may increase in strength during the weathering process.

Fresh drill cores of some rock types, such as basalt and shale may disintegrate after exposure to the atmosphere due to slaking, desiccation, expansion or contraction, stress relief or a combination of any of these factors.

AN ENGINEERING CLASSIFICATION OF SEDIMENTARY ROCKS

This classification system provides a standardised terminology for the engineering description of the sandstone and shales in the Sydney area, but the terms and definitions may be used elsewhere when applicable. Where other rock types are encountered, such as in dykes, standard geological descriptions are used for rock types and the same descriptions as below are used for strength, fracturing and weathering.

Under this system rocks are classified by Rock Type, Strength, Stratification Spacing, Degree of Fracturing and Degree of Weathering. These terms do not cover the full range of engineering properties. Descriptions of rock may also need to refer to other properties (e.g. durability, abrasiveness, etc) where these are relevant.

ROCK TYPE DEFINITIONS

ROCK TYPE	DEFINITION
Conglomerate:	More than 50% of the rock consists of gravel sized (greater than 2mm) fragments.
Sandstone:	More than 50% of the rock consists of sand sized (0.06 to 2mm) grains.
Siltstone:	More than 50% of the rock consists of silt-sized (less than 0.06mm) granular particles and the rock is not laminated.
Claystone:	More than 50% of the rock consists of silt or clay sized particles and the rock is not laminated.
Shale:	More than 50% of the rock consists of silt or clay sized particles and the rock is laminated.

Rocks possessing characteristics of two groups are described by their predominant particle size with reference also to the minor constituents, e.g. clayey sandstone, sandy shale.

STRATIFICATION SPACING

Term	Separation of Stratification Planes
Thinly Laminated	< 6mm
Laminated	6mm to 20mm
Very thinly bedded	20mm to 60mm
Thinly bedded	60mm to 0.2m
Medium bedded	0.2m to 0.6m
Thickly bedded	0.6m to 2m
Very thickly bedded	> 2m

DEGREE OF FRACTURING

This classification applies to diamond drill cores and refers to the spacing of all types of natural fractures along which the core is discontinuous. These include bedding plane partings, joints and other rock defects, but exclude known artificial fractures such as drilling breaks.

Term	Description
Fragmented:	The core is comprised primarily of fragments of length less than 20mm, and mostly of width less than the core diameter
Highly Fractured:	Core lengths are generally less than 20mm – 40mm with occasional fragments.
Fractured:	Core lengths are mainly 30mm – 100mm with occasional shorter and longer section.
Slightly Fractured:	Core lengths are generally 300mm – 1000mm with occasional longer sections and occasional sections of 100mm – 300mm.
Unbroken:	The core does not contain any fracture.

ROCK STRENGTH

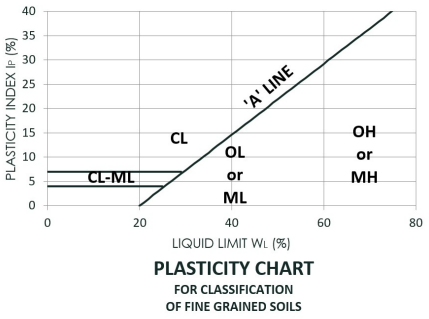
Rock strength is defined by the Point Load Strength Index (Is 50) and refers to the strength of the rock substance in the direction normal to the bedding. The test procedure is described by the International Society of Rock Mechanics.

Term	Point Load Index Is(50) MPa	Field Guide	Approx qu MPa*
Extremely Weak:	0.03	Easily remoulded by hand to a material with soil properties.	0.7
Very Weak:	0.1	May be crumbled in the hand. Sandstone is “sugary” and friable.	2.4
Weak:	0.3	A piece of core 150mm long x 50mm dia. May be broken by hand and easily scored with a knife. Sharp edges of core may be friable and break during handling.	7
Medium Strong:	1	A piece of core 150mm long x 50mm dia. can be broken by hand with considerable difficulty. Readily scored with knife.	24
Strong: (SW)	3	A piece of core 150mm long x 50mm dia. core cannot be broken by unaided hands, can be slightly scratched or scored with knife.	70
Very Strong (SW)	10	A piece of core 150mm long x 50mm dia. may be broken readily with hand held hammer. Cannot be scratched with pen knife.	240
Extremely Strong (Fr)	>10	A piece of core 150mm long x 50mm dia. is difficult to break with hand held hammer. Rings when struck with a hammer.	>240

The approximate unconfined compressive strength (qu) shown in the table is based on an assumed ration to the point load index of 24:1. This ratio may vary widely.

Unified Soil Classification System (Metricated)
Data for Description Indentification and Classification of Soils

MAJOR DIVISIONS				DESCRIPTION				FIELD IDENTIFICATION					LABORATORY CLASSIFICATION				
				Group Symbol	Graphic Symbol	TYPICAL NAME	DESCRIPTIVE DATA						% [2] < 0.06mm	PLASTICITY OF FINE FRACTION			NOTES
COARSE GRAINED SOILS	More than 50% by dry mass, less than 60mm is greater than 0.06mm.	GRAVELS	More than 50% of coarse grains are greater than 2.0mm	GW		Well graded gravels and gravel-sand mixtures, little or no fines	Give typical name, indicate approximate percentages of sand and gravel, maximum size, angularity, surface condition and hardness of the coarse grains, local or geological name and other pertinent descriptive information, symbols in parenthesis. For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions and drainage characteristics. EXAMPLE: Silty Sand, gravelly, about 20% hard, angular gravel particles, 10mm maximum size, rounded and sub angular sand grains coarse to fine, about 15% non-plastic fines with low dry strength, well compacted and moist in place, light brown alluvial sand, (SM)	Determine approximate percentages of material over 60mm size, maximum size, shape, surface texture, hardness of material, geological description. Identify on estimated percentage mass of the various fractions.	COARSE GRAINED SOILS	More than half of the material less than 60mm is larger than 0.06mm	0.06mm is about the smallest particle visible to the naked eye	GRAVELS AND SANDS	GRADATIONS	NATURE OF FINES	DRY STRENGTH	Group Symbol	Use the gradation curve of material passing 60mm for classification of fractions according to criteria given under 'Major Division'.	0-5	-	>4	Between 1 and 3	1. Identify Fines by the method given for fine grained soils. 2. Borderline classifications occur when the percentage of fines (fraction smaller than 0.06mm size) is greater than 5% and less than 12%. Borderline classifications require the use of dual symbols eg SP-SM GW-GC
				GP		Poorly graded gravels and gravel-sand mixtures, little or no fines						GOOD	Wide range in grain size	"Clean" materials (not enough fines to band coarse grains)	None	GW		0-5	-	Fails to comply with above		
		GRAVELLY SOILS		GM		Silty gravels, gravel-sand-silt mixtures						POOR	Predominantly one size or range of sizes			GP		12-50	Below 'A' line and Ip >7	-	-	
				GC		Clayey gravels gravel-sand-clay mixtures						GOOD TO FAIR	"Dirty" materials (Excess of fines)	Fines are non-plastic (1)	None to medium	GM		12-50	Above 'A' line and Ip > 7	-	-	
		SANDS	More than 50% of coarse grains are greater than 2.0mm	SW		Well graded sands and gravelly sands, little or no fines								Fines are plastic (1)		GC		0-5	-	>6	between 1 and 3	
				SP		Poorly graded sands and gravelly sands, little or no fines						GOOD	Wide range in grain size	"Clean" materials (not enough fines to band coarse grains)	None	SW		0-5	-	Fails to comply with above		
		SANDY SOILS		SM		Silty sand, sand-silt mixtures						POOR	Predominantly one size or range of sizes			SP		12-50	Below 'A' line or Ip < 4	-	-	
				SC		Clayey sands, sand-clay mixtures						GOOD TO FAIR	"Dirty" materials (Excess of fines)	Fines are non-plastic (1)	None to medium	SM		12-50	Above 'A' line and Ip > 7	-	-	
														Fines are plastic (1)		SC						
FINE GRAINED SOILS	More than 50% by dry mass, less than 60mm is less than 0.06mm	Liquid Limit less than 50%		ML		Inorganic silts, very fine sands, rock flour, silty or clayey fine sands.	Give typical name, indicate degree and character of plasticity, amount and maximum size of coarse grains, colour in wet condition, odour if any, local or geological name and r pertinent descriptive information, symbols in parenthesis. For undisturbed soil add information on structure, stratification, consistency in undisturbed and remolded states, moisture and drainage conditions. EXAMPLE Clayey Silt, brown, low plasticity, small percentage of fine sand, numerous vertical root-holes, firm and dry in place, fill, (ML).		FINE GRAINED SOILS	More than half of the material less than 50mm is less than 0.06mm		SILT AND CLAY FRACTION									
				CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.						Fraction smaller than 0 20mm AS sieve size										
				OL		Organic silts and organic silty clays of low plasticity						DRY STRENGTH	DILATANCY	TOUGHNESS								
		Liquid Limit more than 50%		MH		Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts.						None to low	Quick to slow	None		ML		Below 'A' line				
				CH		Inorganic clays of high plasticity, fat clays.						Medium to high	None to very slow	Medium		CL		Above 'A' line				
				OH		Organic clays of medium to high plasticity.						Low to medium	Slow	Low		OL		Below 'A' line				
												Low to medium	Slow to none	Low to medium		MH		Below 'A' line				
												High to very high	None	High		CH		Above 'A' line				
												Medium to high	None to very slow	Low to medium		OH		Below 'A' line				
				Pt		Peat muck and other highly organic soils.		Readily identified by colour, odour, spongy feel and generally by fibrous texture								Pt*	*Effervescence with H2O2					



PLASTICITY CHART
FOR CLASSIFICATION OF FINE GRAINED SOILS

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Limitations in the Use and Interpretation of this Geotechnical Report

Our Professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties, either expressed or implied.

The geotechnical report was prepared for the use of the Owner in the design of the subject development and should be made available to potential contractors and/or the Contractor for information on factual data only. This report should not be used for contractual purposes as a warranty of interpreted subsurface conditions such as those indicated by the interpretive borehole and test pit logs, cross- sections, or discussion of subsurface conditions contained herein.

The analyses, conclusions and recommendations contained in the report are based on site conditions as they presently exist and assume that the exploratory bore holes, test pits, and/or probes are representative of the subsurface conditions of the site. If, during construction, subsurface conditions are found which are significantly different from those observed in the exploratory bore holes and test pits, or assumed to exist in the excavations, we should be advised at once so that we can review these conditions and reconsider our recommendations where necessary. If there is a substantial lapse of time between conducting this investigation and the start of work at the site, or if conditions have changed due to natural causes or construction operations at or adjacent to the site, this report should be reviewed to determine the applicability of the conclusions and the recommendations considering the changed conditions and time lapse.

The summary bore hole and test pit logs are our opinion of the subsurface conditions revealed by periodic sampling of the ground as the test holes progressed. The soil descriptions and interfaces between strata are interpretive and actual changes may be gradual.

The bore hole and test pit logs and related information depict subsurface conditions only at the specific locations and at the particular time designated on the logs. Soil conditions at the other locations may differ from conditions occurring at these bore hole and test pit locations. Also, the passage of time may result in a change in the soil conditions at these test locations.

Groundwater levels often vary seasonally. Groundwater levels reported on the boring logs or in the body of the report are factual data only for the dates shown.

Unanticipated soil conditions are commonly encountered on construction sites and cannot be fully anticipated by merely taking soil samples, bore holes or test pits. Such unexpected conditions frequently require that additional expenditures be made to attain a properly constructed project. It is recommended that the Owner consider providing a contingency fund to accommodate such potential extra costs.

This firm cannot be responsible for any deviation from the intent of this report including, but not restricted to, any changes to the scheduled time of construction, the nature of the project or the specific construction methods or means indicated in this report: nor can our company be responsible for any construction activity on sites other than the specific site referred to in this report.

APPENDIX C
Qualitative Terminology and Risk Management

APPENDIX C: – QUALITATIVE TERMINOLOGY FOR USE IN ASSESSING RISK TO PROPERTY (CONTINUED)

QUALITATIVE RISK ANALYSIS MATRIX – LEVEL OF RISK TO PROPERTY

LIKELIHOOD		CONSEQUENCES TO PROPERTY (With Indicative Approximate Cost of Damage)				
	Indicative Value of Approximate Annual Probability	1: CATASTROPHIC 200%	2: MAJOR 60%	3: MEDIUM 20%	4: MINOR 5%	5: INSIGNIFICANT 0.5%
A – ALMOST CERTAIN	10^{-1}	VH	VH	VH	H	M or L (5)
B - LIKELY	10^{-2}	VH	VH	H	M	L
C - POSSIBLE	10^{-3}	VH	H	M	M	VL
D - UNLIKELY	10^{-4}	H	M	L	L	VL
E - RARE	10^{-5}	M	L	L	VL	VL
F - BARELY CREDIBLE	10^{-6}	L	VL	VL	VL	VL

Notes: (5) For Cell A5, may be subdivided such that a consequence of less than 0.1% is Low Risk.
(6) When considering a risk assessment it must be clearly stated whether it is for existing conditions or with risk control measures which may not be implemented at the current time.

RISK LEVEL IMPLICATIONS

Risk Level		Example Implications (7)
VH	VERY HIGH RISK	Unacceptable without treatment. Extensive detailed investigation and research, planning and implementation of treatment options essential to reduce risk to Low; may be too expensive and not practical. Work likely to cost more than value of the property.
H	HIGH RISK	Unacceptable without treatment. Detailed investigation, planning and implementation of treatment options required to reduce risk to Low. Work would cost a substantial sum in relation to the value of the property.
M	MODERATE RISK	May be tolerated in certain circumstances (subject to regulator's approval) but requires investigation, planning and implementation of treatment options to reduce the risk to Low. Treatment options to reduce to Low risk should be implemented as soon as practicable.
L	LOW RISK	Usually acceptable to regulators. Where treatment has been required to reduce the risk to this level, ongoing maintenance is required.
VL	VERY LOW RISK	Acceptable. Manage by normal slope maintenance procedures.

Note: (7) The implications for a particular situation are to be determined by all parties to the risk assessment and may depend on the nature of the property at risk; these are only given as a general guide.

Attachment 1 – Risk Assessment Matrix

E – Extreme risk – detailed action plan required
H - High risk – needs senior management attention
M – Medium risk – specify management responsibility
L – Low risk – manage by routine procedures

High or **Extreme** risks must be reported to Senior Management and require detailed treatment plans to reduce the risk to **Low** or **Medium**.

	Consequence →				
People	Injuries or ailments not requiring medical treatment.	Minor injury or First Aid Treatment Case.	Serious injury causing hospitalisation or multiple medical treatment cases.	Life threatening injury or multiple serious injuries causing hospitalisation.	Death or multiple life threatening injuries.
Reputation	Internal Review	Scrutiny required by internal committees or internal audit to prevent escalation.	Scrutiny required by external committees or ACT Auditor General's Office, or inquest, etc.	Intense public, political and media scrutiny. Eg: front page headlines, TV, etc.	Assembly inquiry or Commission of inquiry or adverse national media.
Business Process & Systems	Minor errors in systems or processes requiring corrective action, or minor delay without impact on overall schedule.	Policy procedural rule occasionally not met or services do not fully meet needs.	One or more key accountability requirements not met. Inconvenient but not client welfare threatening.	Strategies not consistent with Government's agenda. Trends show service is degraded.	Critical system failure, bad policy advice or ongoing non-compliance. Business severely affected.
Financial	1% of Budget or <$5K	2.5% of Budget or <$50K	> 5% of Budget or <$500K	> 10% of Budget or <$5M	>25% of Budget or >$5M
	Insignificant	**Minor**	**Moderate**	**Major**	**Catastrophic**
	1	2	3	4	5

Likelihood ↑	Probability:	Historical:						
	>1 in 10	Is expected to occur in most circumstances	5	**Almost Certain**	**M**	**H**	**H**	**E**	**E**
	1 in 10 - 100	Will probably occur	4	**Likely**	**M**	**M**	**H**	**H**	**E**
	1 in 100 – 1,000	Might occur at some time in the future	3	**Possible**	**L**	**M**	**M**	**H**	**E**
	1 in 1,000 – 10,000	Could occur but doubtful	2	**Unlikely**	**L**	**M**	**M**	**H**	**H**
↓	1 in 10,000 – 100,000	May occur but only in exceptional circumstances	1	**Rare**	**L**	**L**	**M**	**M**	**H**

Adapted from Standards Australia Risk Management AS/NZS 4360: 2004

APPENDIX D
Flowchart for Landslide Risk Management

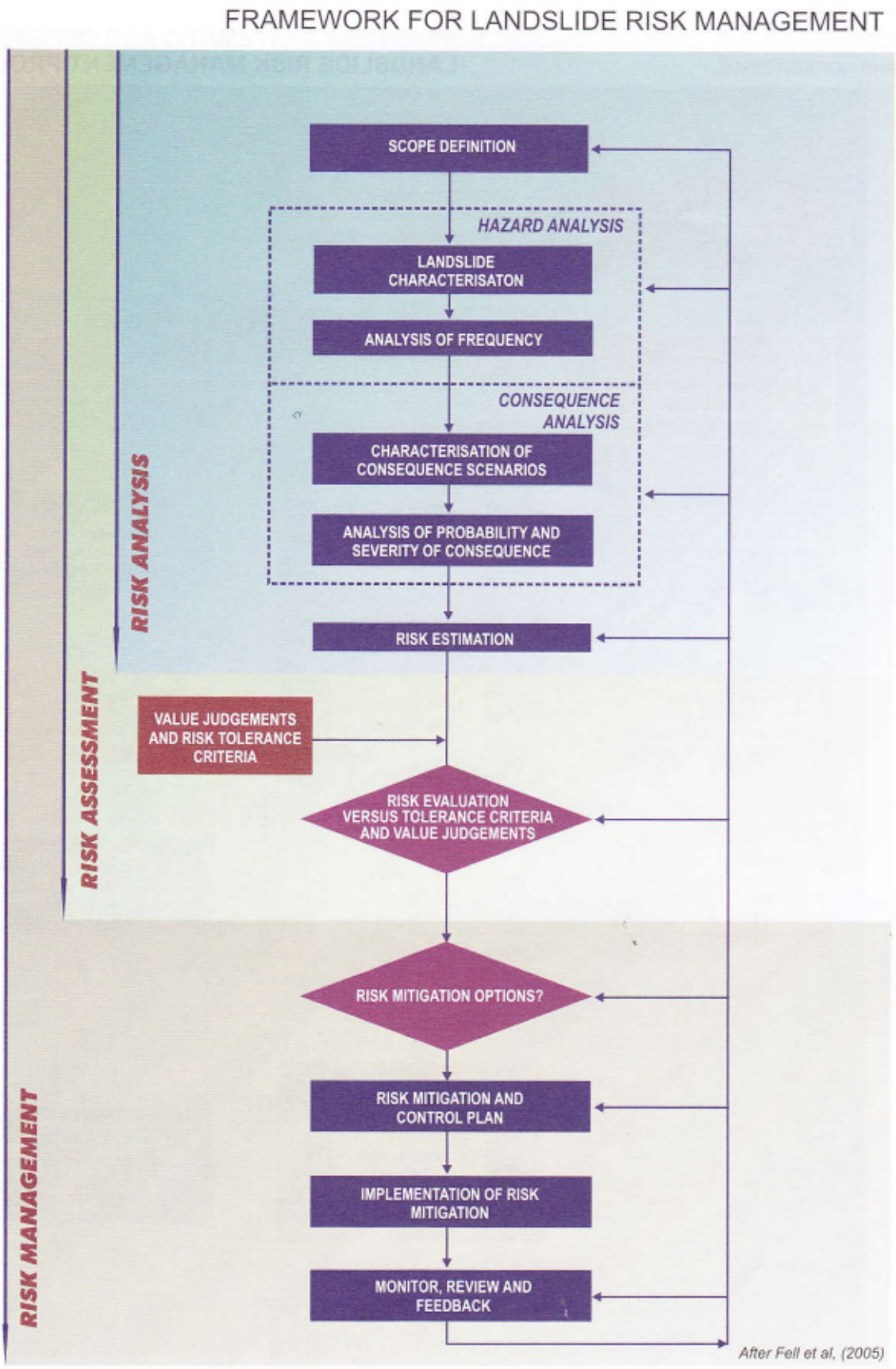


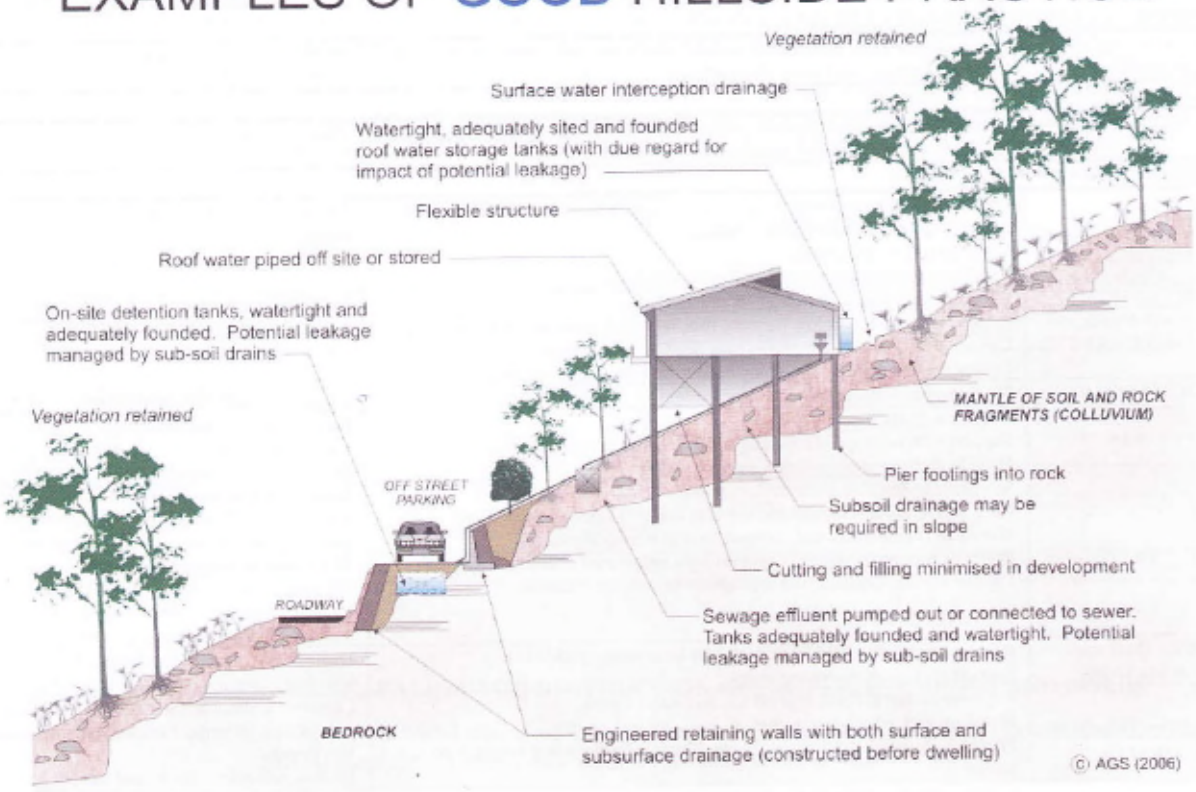
Figure 2: Abbreviated flowchart for Landslide Risk Management.
Ref: AGS (2007a, 2007c)

APPENDIX E
Guidelines for Hillside Construction

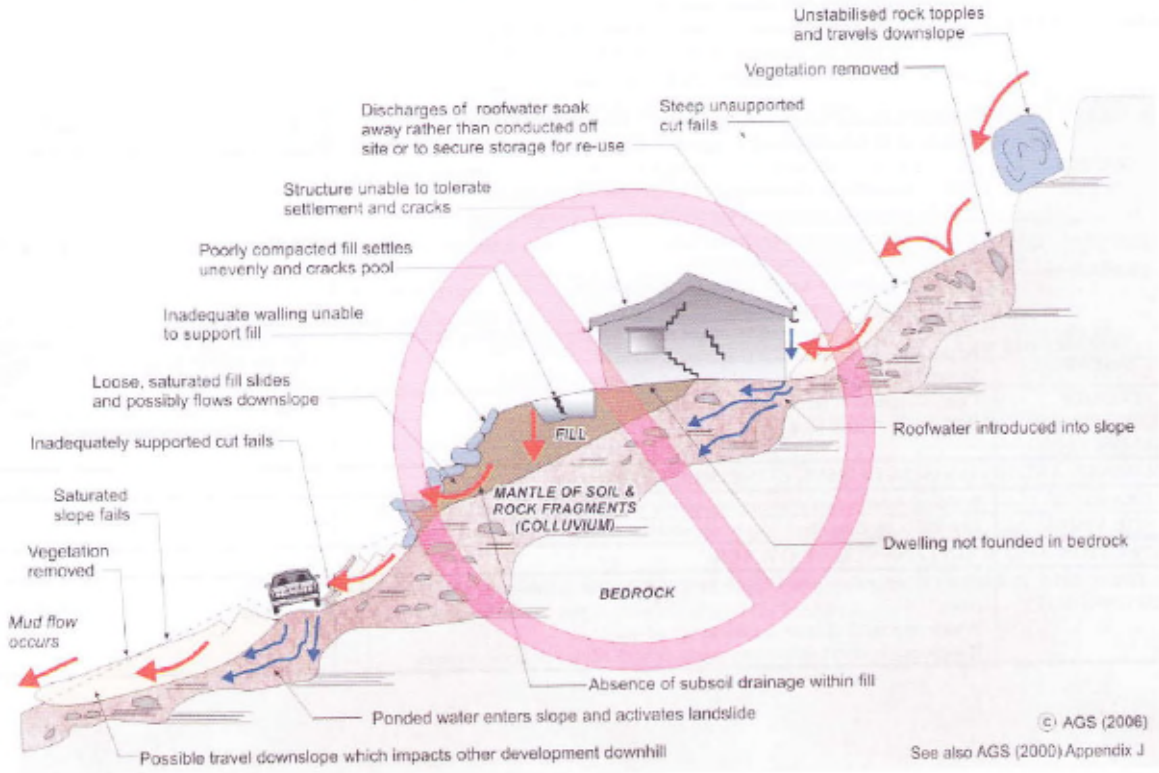
APPENDIX G - SOME GUIDELINES FOR HILLSIDE CONSTRUCTION

	GOOD ENGINEERING PRACTICE	*POOR ENGINEERING PRACTICE*
ADVICE		
GEOTECHNICAL ASSESSMENT	Obtain advice from a qualified, experienced geotechnical practitioner at early stage of planning and before site works.	Prepare detailed plan and start site works before geotechnical advice.
PLANNING		
SITE PLANNING	Having obtained geotechnical advice, plan the development with the risk arising from the identified hazards and consequences in mind.	Plan development without regard for the Risk.
DESIGN AND CONSTRUCTION		
HOUSE DESIGN	Use flexible structures which incorporate properly designed brickwork, timber or steel frames, timber or panel cladding. Consider use of split levels. Use decks for recreational areas where appropriate.	Floor plans which require extensive cutting and filling. Movement intolerant structures.
SITE CLEARING	Retain natural vegetation wherever practicable.	Indiscriminately clear the site.
ACCESS & DRIVEWAYS	Satisfy requirements below for cuts, fills, retaining walls and drainage. Council specifications for grades may need to be modified. Driveways and parking areas may need to be fully supported on piers.	Excavate and fill for site access before geotechnical advice.
EARTHWORKS	Retain natural contours wherever possible.	Indiscriminatory bulk earthworks.
CUTS	Minimise depth. Support with engineered retaining walls or batter to appropriate slope. Provide drainage measures and erosion control.	Large scale cuts and benching. Unsupported cuts. Ignore drainage requirements
FILLS	Minimise height. Strip vegetation and topsoil and key into natural slopes prior to filling. Use clean fill materials and compact to engineering standards. Batter to appropriate slope or support with engineered retaining wall. Provide surface drainage and appropriate subsurface drainage.	Loose or poorly compacted fill, which if it fails, may flow a considerable distance including onto property below. Block natural drainage lines. Fill over existing vegetation and topsoil. Include stumps, trees, vegetation, topsoil, boulders, building rubble etc in fill.
ROCK OUTCROPS & BOULDERS	Remove or stabilise boulders which may have unacceptable risk. Support rock faces where necessary.	Disturb or undercut detached blocks or boulders.
RETAINING WALLS	Engineer design to resist applied soil and water forces. Found on rock where practicable. Provide subsurface drainage within wall backfill and surface drainage on slope above. Construct wall as soon as possible after cut/fill operation.	Construct a structurally inadequate wall such as sandstone flagging, brick or unreinforced blockwork. Lack of subsurface drains and weepholes.
FOOTINGS	Found within rock where practicable. Use rows of piers or strip footings oriented up and down slope. Design for lateral creep pressures if necessary. Backfill footing excavations to exclude ingress of surface water.	Found on topsoil, loose fill, detached boulders or undercut cliffs.
SWIMMING POOLS	Engineer designed. Support on piers to rock where practicable. Provide with under-drainage and gravity drain outlet where practicable. Design for high soil pressures which may develop on uphill side whilst there may be little or no lateral support on downhill side.	
DRAINAGE		
SURFACE	Provide at tops of cut and fill slopes. Discharge to street drainage or natural water courses. Provide general falls to prevent blockage by siltation and incorporate silt traps. Line to minimise infiltration and make flexible where possible. Special structures to dissipate energy at changes of slope and/or direction.	Discharge at top of fills and cuts. Allow water to pond on bench areas.
SUBSURFACE	Provide filter around subsurface drain. Provide drain behind retaining walls. Use flexible pipelines with access for maintenance. Prevent inflow of surface water.	Discharge roof runoff into absorption trenches.
SEPTIC & SULLAGE	Usually requires pump-out or mains sewer systems; absorption trenches may be possible in some areas if risk is acceptable. Storage tanks should be water-tight and adequately founded.	Discharge sullage directly onto and into slopes. Use absorption trenches without consideration of landslide risk.
EROSION CONTROL & LANDSCAPING	Control erosion as this may lead to instability. Revegetate cleared area.	Failure to observe earthworks and drainage recommendations when landscaping.
DRAWINGS AND SITE VISITS DURING CONSTRUCTION		
DRAWINGS	Building Application drawings should be viewed by geotechnical consultant	
SITE VISITS	Site Visits by consultant may be appropriate during construction/	
INSPECTION AND MAINTENANCE BY OWNER		
OWNER'S RESPONSIBILITY	Clean drainage systems; repair broken joints in drains and leaks in supply pipes. Where structural distress is evident see advice. If seepage observed, determine causes or seek advice on consequences.	

EXAMPLES OF GOOD HILLSIDE PRACTICE



EXAMPLES OF POOR HILLSIDE PRACTICE



APPENDIX F
Kosciuszko Alpine Resorts – Geotechnical Policy - Form 1

NSW GOVERNMENT Planning & Environment

Geotechnical Policy
Kosciuszko Alpine Resorts

Form 1 – Declaration and certification made by geotechnical engineer or engineering geologist in a geotechnical report.

DA Number: _____

To be submitted with a development application

You can use Form 1 to verify that the author of a geotechnical report is a geotechnical engineer or engineering geologist as defined by the Department of Planning & Environment (DP&E) Geotechnical Policy. Alternatively, where a geotechnical report has been prepared by a professional person not recognised by DP&E Geotechnical Policy, then Form 1 may be used as technical verification of the geotechnical report if signed by a geotechnical engineer or engineering geologist as defined by the DP&E Geotechnical Policy.

Please contact the Alpine Resorts Team in Jindabyne for further information - phone 02 6456 1733.

To complete this form, please place a cross in the appropriate boxes ☐ and complete all sections.

1. Declaration made by geotechnical engineer or engineering geologist as part of a geotechnical report

I,

Mr ☑ Ms ☐ Mrs ☐ Dr ☐ Other ☐

First Name: JEREMY Family Name: MURRAY

OF

Company/organisation: ACT GEOTECHNICAL ENGINEERS

on this the 4th day of November 2021

certify that I am a geotechnical engineer or engineering geologist as defined by the "Policy" and I (tick appropriate box)

☑ prepared the geotechnical report referenced below in accordance with the AGS 2000 and DP&E Geotechnical Policy – Kosciuszko Alpine Resorts.

☑ am willing to technically verify that the Geotechnical Report referenced below has been prepared in accordance the AGS 2000 and DP&E Geotechnical Policy – Kosciuszko Alpine Resorts.

2. Geotechnical Report Details

Report Title: C12365 - Proposed Units - 5 Diggings Terrace - Thredbo - Geotechnical Investigation & Slope Instability Assessment

Author: Jeremy Murray

Dated: 4/11/2021

DA Site Address: 5 Diggings Terrace, Thredbo, NSW
Lot 768, DP 1119757

DA Applicant:

I am aware that the Geotechnical Report I have either prepared or am technically verifying, (referenced above) is to be submitted in support of a development application for the proposed development site (referenced above), and it's findings will be relied upon by the Consent Authority in determining the development application.

3. Checklist of essential requirements to be contained in a geotechnical risk assessment report to be submitted with a development application

The following checklist covers the minimum requirements to be addressed in a Geotechnical Risk Management Report. This checklist is to accompany the report.

Please tick appropriate box

- ☑ Risk assessment of all identifiable geotechnical hazards in accordance with AGS 2000, as per 6.1 (a) of the policy.
- ☑ Site plans with key hazards identified and other information as per 6.1 (b)
- ☑ Details of site investigation and inspections as per 6.1 (c)
- ☑ Photographs and/or drawings of the site as per 6.1 (d)
- ☑ Presentation of geotechnical model as per 6.1 (e)
- ☑ A specific conclusion as to whether the site is suitable for the development proposed on the above site, if applicable, subject to the following conditions;
  - ☑ Conditions to be provided to establish design parameters,
  - ☑ Conditions to be incorporated into the detailed design to be submitted for the construction certificate,
  - ☑ Conditions applying to the construction phase,
  - ☑ Conditions relating to ongoing management of the site/structure.

4. Signatures

Signature



Chartered professional status

CP Eng #2122247

Name

Jeremy Murray

Date

4/11/2021

5. Contact details

Department of Planning & Environment
Alpine Resorts Team
Shop 5A, 19 Snowy River Avenue
PO Box 36, JINDABYNE 2627
Telephone: 02 6456 1733
Facsimile: 02 6456 1736
Email: alpineresorts@planning.nsw.gov.au

APPENDIX G
Architectural Plans

sellick consultants
Estd 1965
canberra | sydney
ABN 82 634 296 629

Date: 05-July-2022
Project No: 211286
Project: MIXED USE DEVELOPMENT
THREDBO NSW
Issued By: BC

Reason		Method		Type	
I	Information	E	eMail	D	DWG
P	Preliminary	H	Hand	P	PDF
A	Approval	F	FTP Site		
D	Detailed Design				
T	Tender				
C	Construction				
W	Work As Executed				

Revision History						
	21.03.22	27.05.22	24.06.22	29.06.22	01.07.22	05.07.22
Reason		I	A	A	A	A
Method		E	F	F	F	F
Type		P	P	P	P	P

Company	Name	Number of Copies				
			21.03.22	27.05.22	24.06.22	29.06.22
Redhub				1	1	1

Miscellaneous Documents	Current	Miscellaneous Documents Revisions					
			21.03.22	27.05.22	24.06.22	29.06.22	01.07.22

Sketches	Current	Sketch Revisions					
			21.03.22	27.05.22	24.06.22	29.06.22	01.07.22

Drawings		Current	Date Of Drawing Revision					
			21.03.22	27.05.22	24.06.22	29.06.22	01.07.22	05.07.22
GENERAL			-	-	-	-	-	-
211286-DRG-CIV-GN-0001	COVER SHEET, DRAWING INDEX - AND LOCALITY	B	A	-	B	-	-	-
211286-DRG-CIV-GN-0002	GENERAL NOTES - AND LEGEND	B	A	-	B	-	-	-
211286-DRG-CIV-GN-0003	CONCRETE NOTES		-	-	-	-	-	-
ALIGNMENT			-	-	-	-	-	-
211286-DRG-CIV-AL-0101	GENERAL ARRANGEMENT - PLAN	B	A	-	B	-	-	-
211286-DRG-CIV-AL-0111	ALIGNMENT - TYPICAL CROSS SECTIONS		-	-	-	-	-	-
211286-DRG-CIV-AL-0121	ALIGNMENT - CONTROL AND GRADING PLAN	B	A	-	B	-	-	-
211286-DRG-CIV-AL-0131	ALIGNMENT - HORIZONTAL SETOUT TABLES		-	-	-	-	-	-
211286-DRG-CIV-AL-0141	ALIGNMENT - ROAD LONGITUDINAL SECTION	B	A	-	B	-	-	-
EARTHWORKS			-	-	-	-	-	-
211286-DRG-CIV-EW-0201	CONCEPT EARTHWORKS - CUT AND FILL VOLUME	D	A	B	C	D	-	-
211286-DRG-CIV-EW-0211	EARTHWORKS - LONGITUDINAL SECTIONS SHEET	B	-	-	A	B	-	-
211286-DRG-CIV-EW-0212	EARTHWORKS - LONGITUDINAL SECTIONS SHEET	B	-	-	A	B	-	-
211286-DRG-CIV-EW-0213	EARTHWORKS - LONGITUDINAL SECTIONS SHEET	B	-	-	A	B	-	-
211286-DRG-CIV-EW-0214	EARTHWORKS - LONGITUDINAL SECTIONS SHEET	B	-	-	A	B	-	-
211286-DRG-CIV-EW-0215	EARTHWORKS - LONGITUDINAL SECTIONS SHEET	B	-	-	A	B	-	-
211286-DRG-CIV-EW-0216	EARTHWORKS - LONGITUDINAL SECTIONS SHEET	B	-	-	A	B	-	-
211286-DRG-CIV-EW-0217	EARTHWORKS - LONGITUDINAL SECTIONS SHEET	B	-	-	A	B	-	-
PAVEMENT			-	-	-	-	-	-
211286-DRG-CIV-PV-0301	PAVEMENT PLAN	B	A	-	B	-	-	-
211286-DRG-CIV-PV-0311	PAVEMENT CONCRETE JOINTING - PLAN		-	-	-	-	-	-
211286-DRG-CIV-PV-0321	PAVEMENT DRIVEWAY JOINTING - PLAN		-	-	-	-	-	-
211286-DRG-CIV-PV-0331	PAVEMENT DETAILS - SHEET 1		-	-	-	-	-	-
211286-DRG-CIV-PV-0332	PAVEMENT DETAILS - SHEET 2		-	-	-	-	-	-
STORMWATER			-	-	-	-	-	-
211286-DRG-CIV-DR-0400	STORMWATER NOTES AND DETAILS		-	-	-	-	-	-
211286-DRG-CIV-DR-0401	STORMWATER AND SUBSOIL DRAINAGE - PLAN S	C	A	-	B	-	-	C
211286-DRG-CIV-DR-0402	STORMWATER AND SUBSOIL DRAINAGE - PLAN S	B	-	-	A	-	-	B
211286-DRG-CIV-DR-0411	STORMWATER - STRUCTURE SETOUT SCHEDULE		-	-	-	-	-	-
211286-DRG-CIV-DR-0421	STORMWATER - LONGITUDINAL SECTIONS		-	-	-	-	-	-
211286-DRG-CIV-DR-0431	STORMWATER - DETAILS	C	-	-	A	-	B	C
211286-DRG-CIV-DR-0491	WATER SENSITIVE URBAN - DESIGN PLAN		-	-	-	-	-	-
UTILITIES			-	-	-	-	-	-
211286-DRG-CIV-UT-0501	UTILITIES PLAN - SHEET 1		-	-	-	-	-	-
211286-DRG-CIV-UT-0502	UTILITIES PLAN - SHEET 2		-	-	-	-	-	-
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RETAINING WALLS			-	-	-	-	-	-
211286-DRG-CIV-RW-0601	RETAINING WALLS - ALIGNMENT CONTROL AND P		-	-	-	-	-	-
TRAFFIC CONTROL DEVICES			-	-	-	-	-	-
211286-DRG-CIV-TC-0701	TCD PLAN		-	-	-	-	-	-
TEMPORARY TRAFFIC MANAGEME			-	-	-	-	-	-
211286-DRG-CIV-TM-0800	COVER SHEET, DRAWING INDEX - AND LOCALITY		-	-	-	-	-	-
211286-DRG-CIV-TM-0801	TRAFFIC MANAGEMENT PLAN		-	-	-	-	-	-
211286-DRG-CIV-TM-0802	TRAFFIC MANAGEMENT PLAN PROJECT - OVERVI		-	-	-	-	-	-
211286-DRG-CIV-TM-0803	TRAFFIC MANAGEMENT PLAN - RISK MATRIX		-	-	-	-	-	-
211286-DRG-CIV-TM-0811	VEHICLE MOVEMENTS PLAN		-	-	-	-	-	-
211286-DRG-CIV-TM-0831	TRAFFIC GUIDANCE SCHEME		-	-	-	-	-	-
211286-DRG-CIV-TM-0851	CONSTRUCTION PARKING PLAN		-	-	-	-	-	-
ENVIRONMENTAL MANAGEMENT			-	-	-	-	-	-
211286-DRG-CIV-EV-0900	LANDSCAPE MANAGEMENT - NOTES AND LEGEND	B	A	-	B	-	-	-
211286-DRG-CIV-EV-0901	LANDSCAPE MANAGEMENT AND - PROTECTION P	B	A	-	B	-	-	-
211286-DRG-CIV-EV-0910	SEDIMENT EROSION CONTROL - NOTES AND LEG	B	A	-	B	-	-	-
211286-DRG-CIV-EV-0911	SEDIMENT EROSION CONTROL - PLAN	B	A	-	B	-	-	-
DEMOLITION			-	-	-	-	-	-
211286-DRG-CIV-DM-1101	DEMOLITION - PLAN		-	-	-	-	-	-
VEHICLE TURNING PATHS			-	-	-	-	-	-
211286-DRG-CIV-TP-2201	VEHICLE TURNING PATHS PLAN - SHEET 1	B	A	-	B	-	-	-
211286-DRG-CIV-TP-2202	VEHICLE TURNING PATHS PLAN - SHEET 2	A	-	-	A	-	-	-
211286-DRG-CIV-TP-2203	VEHICLE TURNING PATHS PLAN - SHEET 3	A	-	-	A	-	-	-
211286-DRG-CIV-TP-2204	VEHICLE TURNING PATHS PLAN - SHEET 4	A	-	-	A	-	-	-
211286-DRG-CIV-TP-2205	VEHICLE TURNING PATHS PLAN - SHEET 5	A	-	-	A	-	-	-
211286-DRG-CIV-TP-2206	VEHICLE TURNING PATHS PLAN - SHEET 6	A	-	-	A	-	-	-
211286-DRG-CIV-TP-2207	VEHICLE TURNING PATHS PLAN - SHEET 7	A	-	-	A	-	-	-
WASTE MANAGEMENT			-	-	-	-	-	-
211286-DRG-CIV-WM-2301	WASTE MANAGEMENT PLAN		-	-	-	-	-	-
211286-DRG-CIV-WM-2331	TYPICAL WASTE ENCLOSURE - DETAIL SHEET 1		-	-	-	-	-	-
211286-DRG-CIV-WM-2332	TYPICAL WASTE ENCLOSURE - DETAIL SHEET 2		-	-	-	-	-	-

REFERENCES:

1. FOR COVER SHEET, DRAWING INDEX AND LOCALITY PLAN REFER DRAWING GN-0001
2. FOR GENERAL NOTES AND LEGEND REFER DRAWING GN-0002
3. FOR ALIGNMENT CONTROL AND GRADING PLAN REFER DRAWING AL-0121
4. FOR PAVEMENT PLAN REFER DRAWING PV-0301
5. FOR STORMWATER AND SUBSOIL DRAINAGE PLAN REFER DRAWING DR-0401



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Rev	Description	Date	Drawn By
B	DEVELOPMENT APPLICATION	24.06.2022	DA
A	DEVELOPMENT APPLICATION	21.03.2022	MN

Scales: 0 5 7.5 10m — 1:200 @ A1

North

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Original Size	A1	Drawn By: MN	Drafting Check: DA
Date Plotted	24-Jun-22	Designed By: LT	Design Check: JM
Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 21/03/2022
Height Datum	AHD	Approved Signature	

Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: GENERAL ARRANGEMENT PLAN

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	AL	0101	B



REFERENCE:

1. FOR ALIGNMENT ROAD LONGITUDINAL SECTION REFER DRAWING AL-0141

Rev	Description	Date	Drawn By
B	DEVELOPMENT APPLICATION	24.06.2022	DA
A	DEVELOPMENT APPLICATION	21.03.2022	MN

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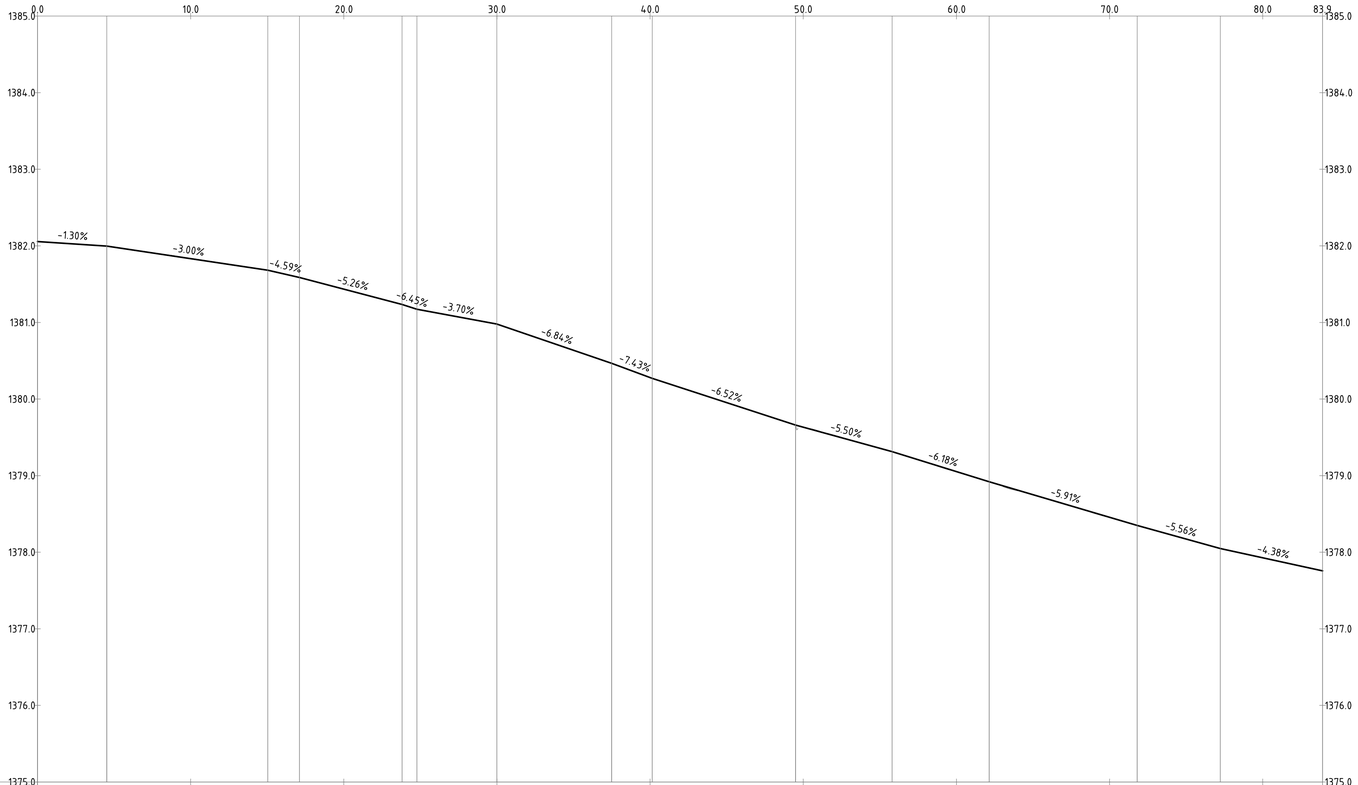
Original Size	A1	Drawn By: MN	Drafting Check: DA
Date Plotted	24-Jun-22	Designed By: LT	Design Check: JM
Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 21/03/2022
Height Datum	AHD	Approved Signature	

Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: ALIGNMENT CONTROL AND GRADING PLAN

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	AL	0121	B

File Name: P:\2021\211286_L768-Thredbo\04_CAD\4.2_Drawings\CIV\211286-drg-civ-al-0121.dwg



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EXISTING LEVELS	1382.056	1381.838	1381.435	1380.979	1380.281	1379.625	1379.139	1379.049	1378.450	1377.927	1377.756
DEPTH	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	58.517	60.000	70.000	80.000	83.907

PROFILE OF ALIGNMENT AL-01
(VERT SCALE 1:40, HOR SCALE 1:200, VERT EXAG 1:5)
FROM: CH 0.000 TO CH 83.907

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Rev	Description	Date	Drawn By
B	DEVELOPMENT APPLICATION	24.06.2022	DA
A	DEVELOPMENT APPLICATION	21.03.2022	MN

Scales
0 5 7.5 10m
1:200 @ A1

North

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Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 21/03/2022
Height Datum	AHD	Approved Signature	

Project Name and Location
MIXED USE DEVELOPMENT
THREDBO NSW

Drawing Title
ALIGNMENT
ROAD LONGITUDINAL SECTION

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	AL	0141	B

sellick consultants
Est. 1965
canberra | sydney

Our Ref: 211286 BC/bc
Contact: Bernie Cusack

24 lonsdale street,
suite 122 mode 3,
braddon act 2612
po box 5005
braddon act 2612

p (02) 6201 0200
f (02) 6247 2203

Friday, June 24, 2022

Re: 211286

LOT 768, DP1119757, DIGGINGS TERRACE, THREDBO, NSW
TRAFFIC & WASTE STATEMENT

INTRODUCTION

This statement presents the traffic/parking and waste assessment for the proposed mixed-use development at Lot 768, Dp1119757, Diggings Terrace, Thredbo, NSW.

The project consists of two-storey terraces, two-storey lodges including ground and mezzanine floors carparks.

PROJECT OUTLINE

The project consists of 20 carparking spaces distributed as shown below.

1. Ground floor – 9 spaces.
2. Mezzanine floor – 11 spaces inclusive of two spaces dedicated for people with disabilities.

The car parking assessment for the development was carried out against the Australian Standard AS 2890. The parking includes User Class 2 which allows for full opening of doors and is ideal for hotels parking, and User Class 4 for parking for people with disabilities.

TRAFFIC/PARKING

Carpark Dimensions

The dimensions of the User Class 2 car parking spaces are 2.5 m wide and 5.4 m long as per Australian Standard 2890.1-2004 Parking Facilities, Part 1: Off-street parking (AS 2890.1) Figure 2.2 Layouts for Angle Parking Spaces.

The dimensions of the User Class 4 car parking space and associated shared zone are 2.4 m wide and 5.4 m long as per Australian Standard 2890.6-2009 Parking Facilities, Part 6: Off-street parking for people with disabilities (AS 2890.6) Clause 2.2.1.

Spaces 1-18 are 2.5m wide and 5.4m long and the dedicated disabled parking spaces, 19 and 20 are 2.4m wide and 5.4m long. Please refer to the attached car parking plan in Appendix 1.

All proposed parking spaces dimensions for the development comply with both Australian Standard 2890.1 (2004) and Australian Standard 2890.6 (2009).

Headroom

Australian Standard 2890.1 (2004) specifies that minimum headroom for carparks should be 2.2m and Australian Standard 2890.6 (2009) specifies that the minimum headroom for carparks for people with disabilities should be 2.5m.

The headroom above Spaces 1-18 is above 2.2m and complies with Australian Standard 2890.1 (2004). The headroom above Spaces 19 and 20 is above 2.5m complies with Australian Standard 2890.6 (2009).

Turning Paths

Due to the limited space between the ground floor carpark and Diggings Terrace, the sightlines for drivers reversing from the carpark are limited and is therefore a safety issue. It is consequently a requirement that parking for ground floor spaces 1-9 be carried out in a reverse direction, as this allows drivers to have better sightlines when they exit the carpark in a forward direction.

Mezzanine spaces 10-20 are setback further from Diggings Terrace, hence sightlines are not an issue. Drivers can comfortably park either in forward or reverse directions.

AutoCAD was used to analyze the turning paths into ground floor and mezzanine spaces. The swept path analysis demonstrates that vehicles can safely turn into spaces 1-9 in reverse direction, and into spaces 11-20 in a forward direction.

The swept paths for each car parking space are attached in Appendix 2.

Safety along Diggings Terrace

The parking movements at the ground floor carpark have the potential of causing traffic hazards along Diggings Terrace resulting in vehicles may falling over the edge across Diggings Terrace. It is therefore a requirement that guardrails be installed on the western corner across Diggings Terrace to ensure safety for both exiting drivers and other road users.

WASTE

Waste management has been assessed by Thredbo Environmental Services. Waste facilities are to be provided in accordance with the attached waste management plan prepared by Thredbo Environmental Services.

Yours faithfully,



Bernie Cusack
B.Eng. (Civil), MIE Aust CPEng NER RPEQ
Civil Director
for **Sellick Consultants Pty Ltd**

THREDBO ENVIRONMENTAL SERVICES
WHEELED BIN WASTE ENCLOSURE STANDARD

PROPERTY - Lot 768, Diggings Terrace, Thredbo

It is understood that the proposed building has a planned total of 86 beds spread across 14 Apartments in the one complex and 5 stand-alone buildings and a commercial restaurant and bar with a floor area of some 150m^2.

The Kosciuszko Thredbo Pty Ltd (KT) waste system uses a combination of 120 / 240 / 660 litre wheeled bins for putrescible waste collection and organics recycling and a poly weave bag system for comingled and paper/carboard recycling.

From an operational perspective, KT requires provision to be made for enough ingress / egress room to wheel bins past any parked cars to the waste collection vehicle(s) which would be parking on the Diggings Terrace road edge. A property this size would be considered a “major” in KT’s system and as such would be serviced seven days a week in peak periods.

It may be considered to split the waste facilities into two ends of the property that while making two collection points for KT to service, may assist with the layout and management of the facilities.

KT has developed an average ratio of 1 x 120 litre wheeled bin to six beds for apartment style accommodation and 1 x 660 litre wheeled bins per 50 m^2 for a commercial restaurant based on historical collection figures.

For the proposed restaurant, depending on how the waste enclosure is going to be laid out and internal access, the 660’s can be substituted with 240 litre wheeled bins that may work better with the floor space available.

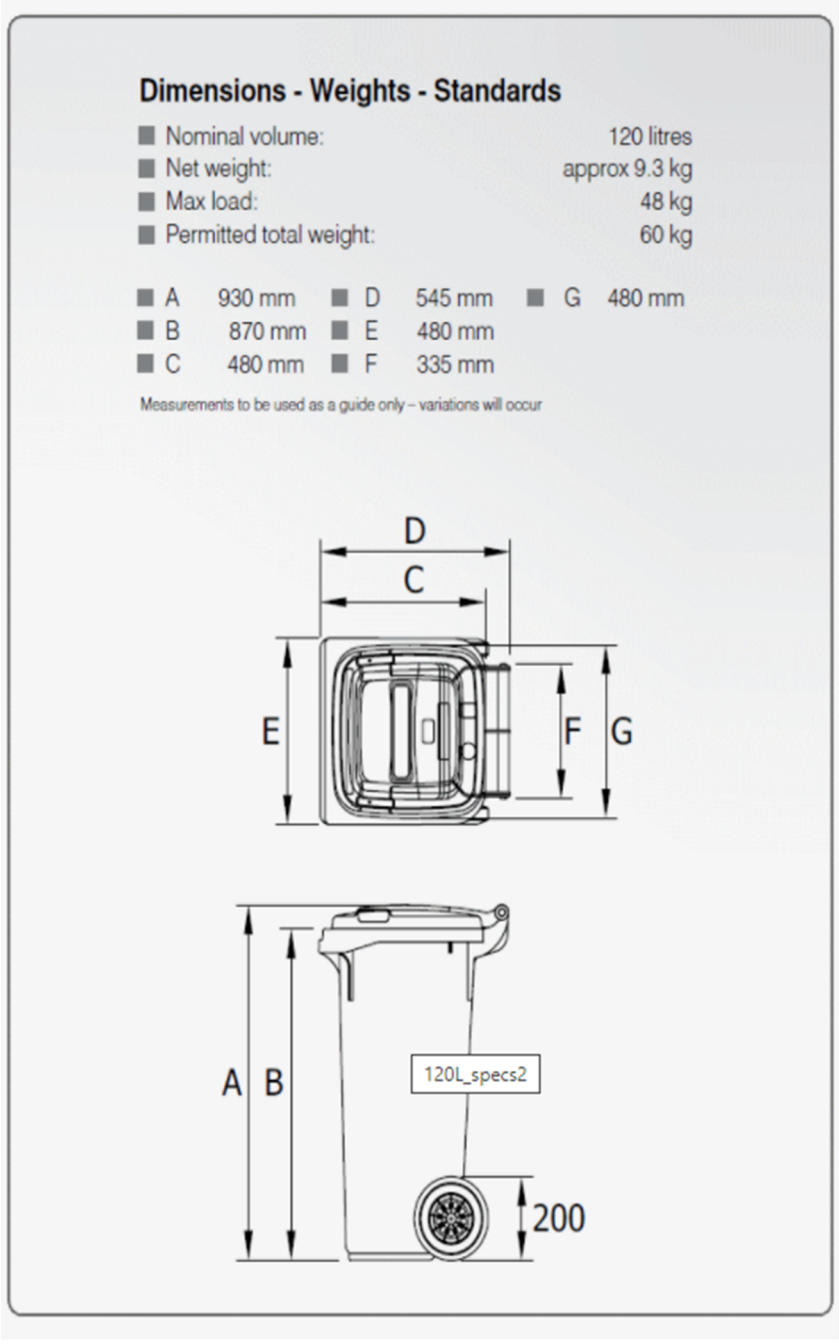
For the proposed restaurant and bar area, provision should be made for a total of 3 x 660’s or 7 x 240’s. This total includes recyclable material, i.e. only two 660 waste bins (or five 240’s) will actually need to be installed with the remaining floor space set up to cater for the polyweave bag recycling system. At some stage in the future, KT may go to a wheeled bin system for recycling, however this is not committed to as yet.

For the proposed Apartments “residents”, provision should be made for 15 x 120 litre wheeled bins and a similar principle applies to the residents with regards to floor space for recycling, i.e. only 10 wheeled bins would be installed with the remaining floor space set up to cater for recycling.

We are happy to discuss and please feel free to contact the Thredbo Environmental Services Manager or Property Manager on 02 6459 4100 to discuss.

STANDARD 120 LITRE MOBILE GARBAGE BIN DIMENSIONS

Allow approximately 100mm clear space either side of the bin plus maneuvering space.



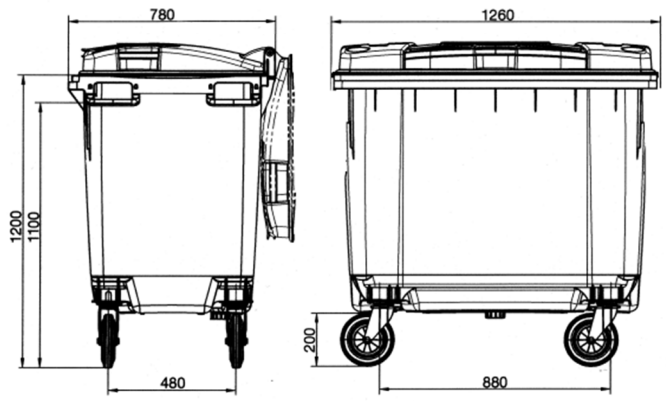
STANDARD 660 LITRE MOBILE GARBAGE BIN DIMENSIONS

Allow approximately 150mm clear space either side of the bin plus maneuvering space.

Dimensions - Weights - Standards

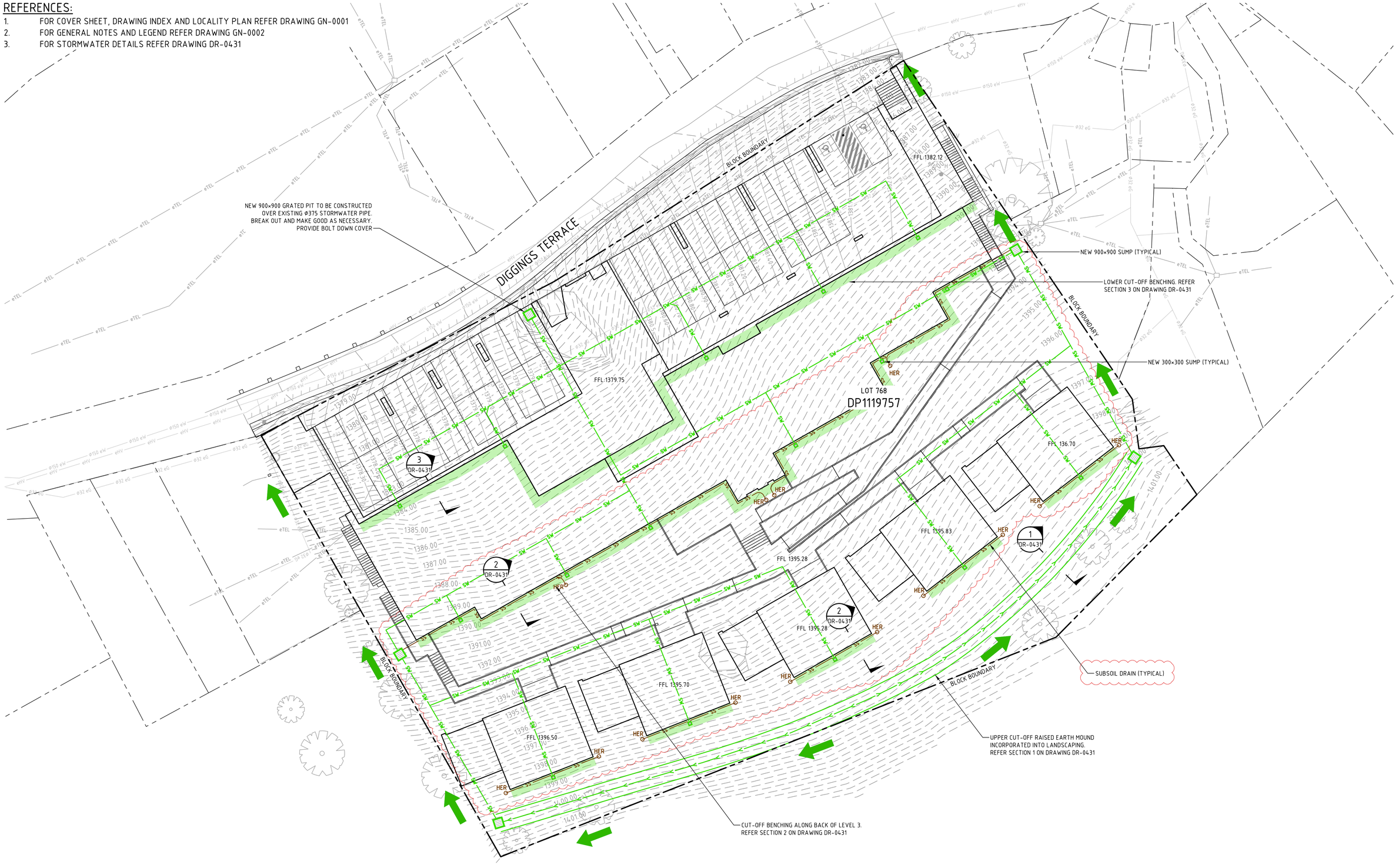
Nominal volume:	660 litres
Net weight:	43 kg
Max. load:	265 kg
Permitted total weight:	310 kg

Measurements to be used as a guide only - variations will occur



REFERENCES:

1. FOR COVER SHEET, DRAWING INDEX AND LOCALITY PLAN REFER DRAWING GN-0001
2. FOR GENERAL NOTES AND LEGEND REFER DRAWING GN-0002
3. FOR STORMWATER DETAILS REFER DRAWING DR-0431



File Name: P:\2021\211286_L768-Thredbo\04_CAD\4.2_Drawings\CIV\211286-drg-civ-dr-0401.dwg

Rev	Description	Date	Drawn By
C	DEVELOPMENT APPLICATION	05.07.2022	DA
B	DEVELOPMENT APPLICATION	24.06.2022	DA
A	DEVELOPMENT APPLICATION	21.03.2022	MN

Scales: 0 5 7.5 10m — 1:200 @ A1

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Original Size	A1	Drawn By: MN	Drafting Check: DA
Date Plotted	5-Jul-22	Designed By: LT	Design Check: JM
Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 21/03/2022
Height Datum	AHD	Approved Signature	

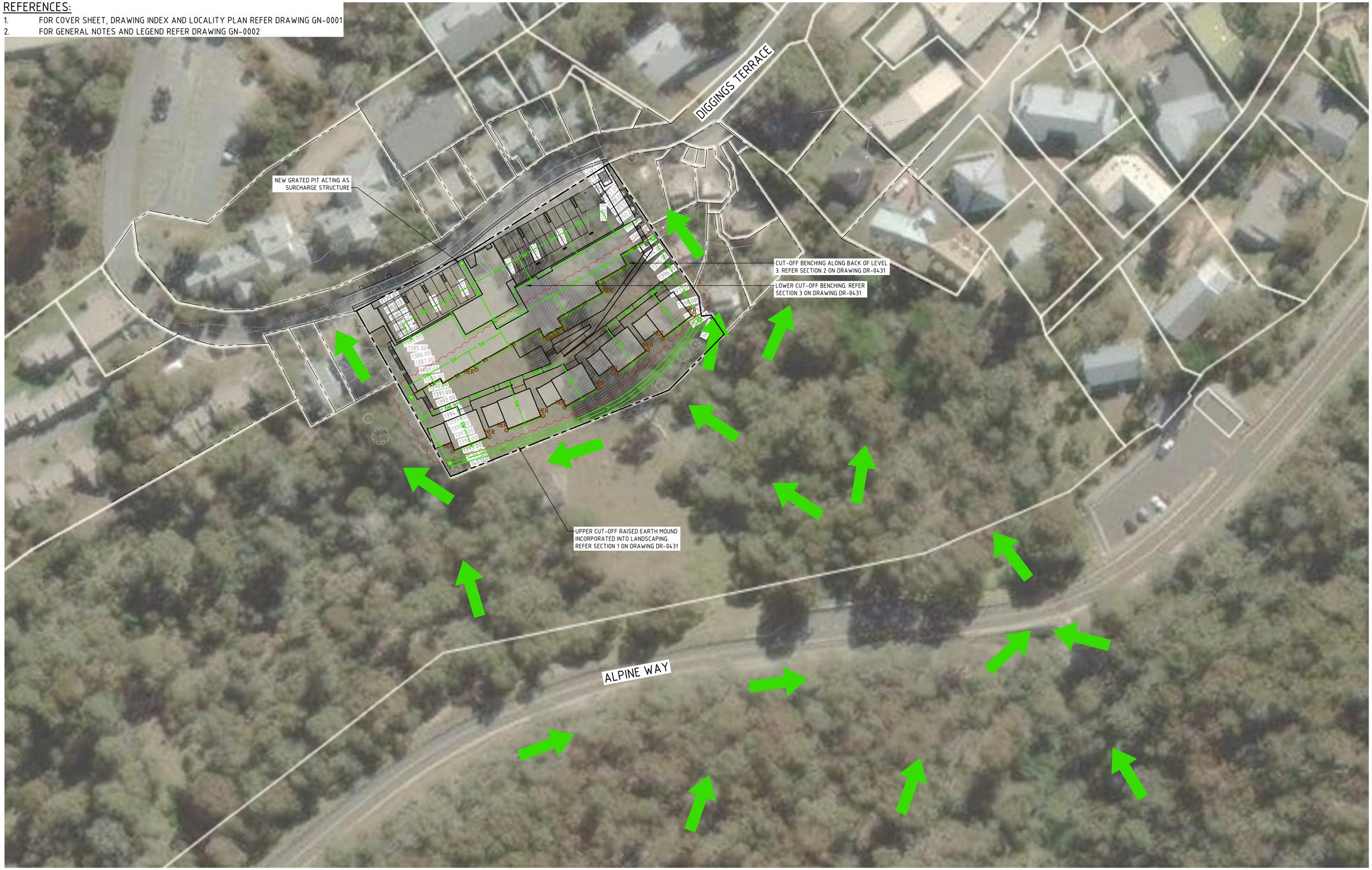
Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: STORMWATER AND SUBSOIL DRAINAGE PLAN SHEET 1

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	DR	0401	C

REFERENCES:

1. FOR COVER SHEET, DRAWING INDEX AND LOCALITY PLAN REFER DRAWING GN-0001
2. FOR GENERAL NOTES AND LEGEND REFER DRAWING GN-0002



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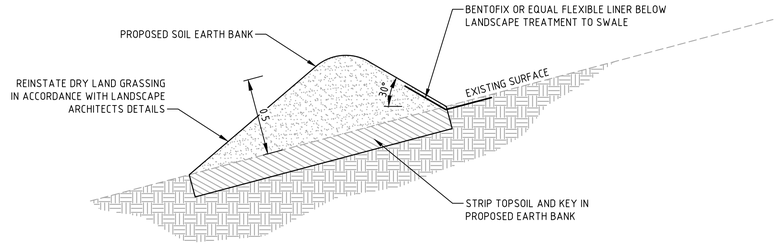
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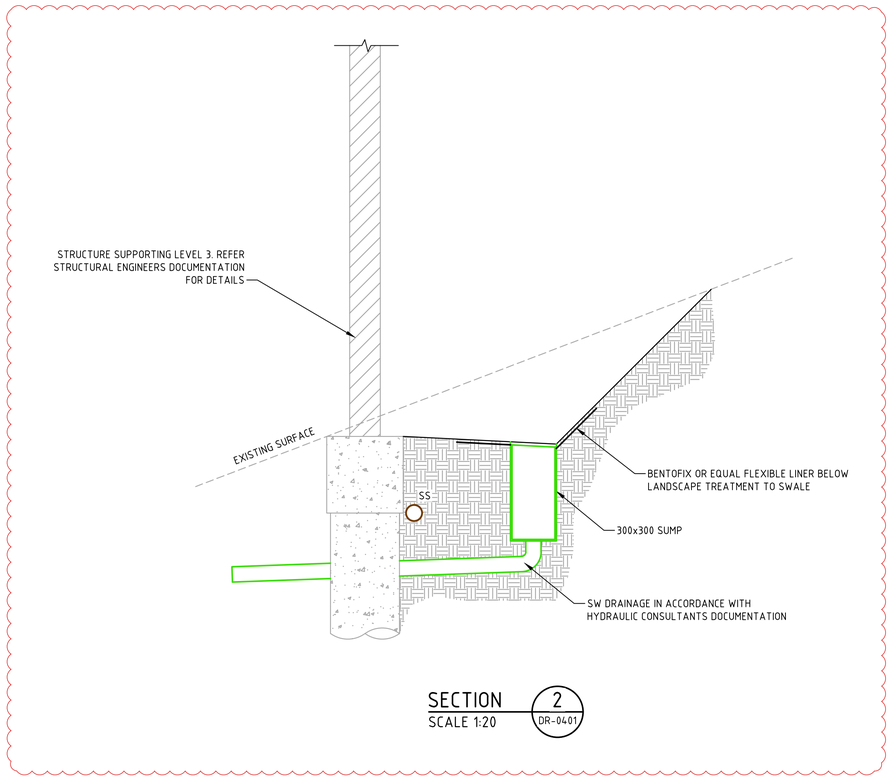
Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: STORMWATER AND SUBSOIL DRAINAGE PLAN SHEET 2

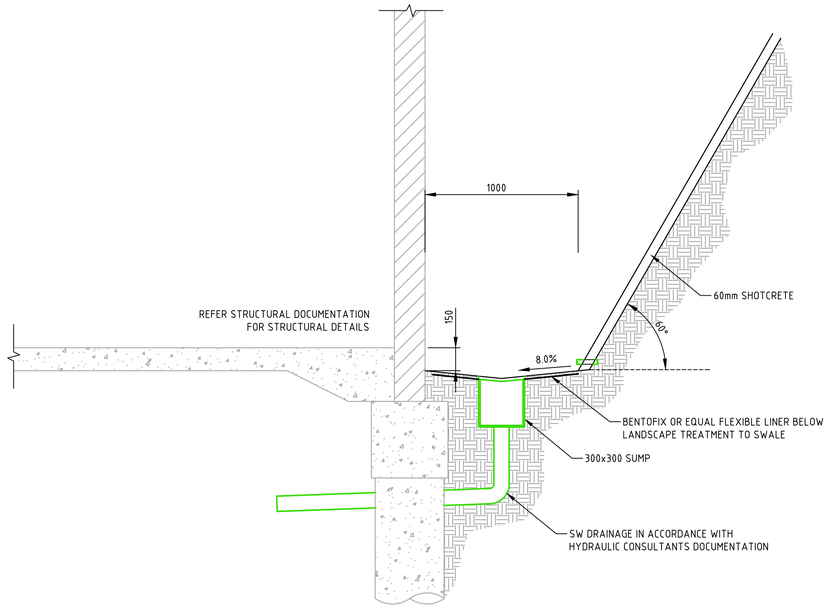
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	DR	0402	B



SECTION 1
SCALE 1:20
DR-0401



SECTION 2
SCALE 1:20
DR-0401



SECTION 3
SCALE 1:20
DR-0401

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Rev	Description	Date	Drawn By
C	DEVELOPMENT APPLICATION	05.07.2022	DA
B	DEVELOPMENT APPLICATION	01.07.2022	DA
A	DEVELOPMENT APPLICATION	24.06.2022	DA

Scales
0 500 750 1000mm
1:20 @ A1

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Height Datum	AHD	Approved Signature	

Project Name and Location
MIXED USE DEVELOPMENT
THREDBO NSW

Drawing Title
STORMWATER DETAILS

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	DR	0431	C

LANDSCAPE MANAGEMENT & PROTECTION NOTES

GENERAL ENVIRONMENTAL MANAGEMENT

1. BEFORE COMMENCING WORKS, THE COORDINATOR SHALL ADVISE COUNCIL IN WRITING THAT THE PROTECTIVE MEASURES HAVE BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED LANDSCAPE MANAGEMENT PROTECTION PLAN (LMPP). RANDOM AUDITS WILL BE UNDERTAKEN BY QRPC TO ENSURE COMPLIANCE: FAILURE TO COMPLY MAY INCUR THE ISSUE OF A STOP WORK NOTICE.

2. ALL WORKS SHALL BE CONTAINED WITHIN THE AUTHORISED SITE EXCEPT FOR APPROVED SERVICE CONNECTIONS IN THE VERGE OR OTHER APPROVED EXCEPTIONS

3. DURING THE PROGRESS OF THE WORKS ALL EXISTING VERGE GRASS COVER SHALL BE MAINTAINED IN ITS PRE-EXISTING CONDITION. PROTECTIVE MEASURES SHALL INCLUDE REGULAR WATERING TO MAINTAIN GRASS AND TREES IN GOOD CONDITION.

4. WHERE THE SURFACE IS GRASS OR BARE SOIL WITHOUT TREES, NO PROTECTION IS REQUIRED. WHERE TOPSOIL AND GRASS OR OTHER APPROVED SURFACES, ARE INSTALLED AT THE COMPLETION OF THE WORKS IN ACCORDANCE WITH QPRC REQUIREMENTS

SUPERVISION

1. FOR ALL WORKS, OTHER THAN MINOR WORKS (I.E. MINOR IN COMPLEXITY AND/OR SCOPE OF WORKS AND CONFIRMED AS MINOR WORKS BY QPRC), AND UNLESS OTHERWISE APPROVED BY COUNCIL A SUITABLY QUALIFIED LANDSCAPE ARCHITECT OR HORTICULTURIST SHALL BE EMPLOYED TO ENSURE THAT THE WORK IN THE VERGE MEETS THE REQUIREMENTS. THE ARCHITECT/HORTICULTURIST SHALL ALSO BE PRESENT DURING ANY CULTIVATION OR RESTORATION OF THE VERGE WHICH AFFECTS PLANT MATERIAL AND SHALL PROVIDE CERTIFICATION, ENDORSED BY THE COORDINATOR, THAT ALL WORK, CULTIVATION AND RESTORATION HAVE BEEN PERFORMED TO INDUSTRY STANDARDS.

STORAGE OF CONSTRUCTION MATERIALS

1. THE STORAGE OF CONSTRUCTION MATERIALS AND THE PARKING OF VEHICLES OR EQUIPMENT ON VERGES OR ADJACENT PUBLIC OPEN SPACES IS NOT PERMITTED WITHOUT PRIOR APPROVAL FROM COUNCIL. WHERE THERE IS NO ALTERNATIVE AVAILABLE OTHER THAN TO USE THESE AREAS FOR STORAGE AND/OR PARKING, THE COORDINATOR MAY LODGE AN APPLICATION WITH THE LMPP REQUESTING APPROVAL FOR THE USE OF PUBLIC LAND FOR THE DESIGNATED PURPOSES. APPROVAL MAY BE GIVEN BY COUNCIL SUBJECT TO CERTAIN TERMS AND CONDITIONS OF USE.

SITE ACCOMMODATION

SITE SHEDS, STORAGE SHEDS, SITE AMENITIES OR BILLBOARDS ARE NOT TO BE ERECTED ON VERGES OR PUBLIC OPEN SPACES WITHOUT PRIOR APPROVAL. SHOULD THERE BE NO ALTERNATIVE, THE COORDINATOR MAY LODGE AN APPLICATION WITH THE LMPP REQUESTING APPROVAL TO ERECT SUCH A STRUCTURE ON PUBLIC LAND. THE ERECTION OF SITE ACCOMMODATION MAY BE APPROVED SUBJECT TO THE COORDINATOR'S AGREEMENT TO COMPLY WITH THE TERMS AND CONDITIONS SPECIFIED BY COUNCIL AND OBTAINING A PERMIT

PROTECTIVE FENCING

1. ALL TEMPORARY PROTECTIVE FENCES ERECTED TO PROTECT EXISTING ASSETS SHALL BE IN ACCORDANCE WITH THE APPROVED LMPP DRAWING. FENCING SHALL BE ERECTED BEFORE THE COMMENCEMENT OF ANY SITE WORKS AND REMOVED AT THE COMPLETION OF ALL CONSTRUCTION ACTIVITY EXCEPT DURING VERGE RESTORATION. THE FENCE SHALL REMAIN IN PLACE THROUGHOUT THE CONSTRUCTION PERIOD.

2. EXISTING TREES, PLANTINGS AND GRASS SHALL BE FENCED OFF TO ENCLOSE THE STREET VERGE, PUBLIC OPEN SPACE OR UNLEASED TERRITORY LAND AREA. UNLESS OTHERWISE APPROVED BY COUNCIL, PROTECTIVE FENCING SHALL BE LOCATED:
   × ALONG THE DRIP-LINE OF EACH TREE (AS A MINIMUM), AND
   × 1.2m FROM THE BACK OF THE KERB FOR THE FULL FRONTAGE OF THE LEASE, ALONG THE PROPERTY BOUNDARY AND ALONG THE APPROVED DRIVEWAY ACCESS TO ENSURE THAT THE VERGE IS COMPLETELY ENCLOSED.

3. USE OF TEMPORARY 1800MM TALL CONTINUOUS MESH FENCE SUPPORTED BY STEEL POSTS WITH CONCRETE BASES, OR PREFABRICATED FENCING PANELS WITH CONCRETE BASES, IS MANDATORY. ANY VARIATION FROM THIS REQUIREMENT SHALL BE ACCOMPANIED BY WRITTEN APPROVAL FROM COUNCIL.

4. EXISTING VERGE FOOTPATHS SHALL BE MAINTAINED. ALL EXISTING VERGE FOOTPATHS AND DRIVEWAYS SHALL REMAIN UNOBSTRUCTED THROUGHOUT THE CONSTRUCTION PERIOD TO PROVIDE SAFE PEDESTRIAN MOVEMENT AT ALL TIMES UNLESS AN ALTERNATIVE IS APPROVED BY COUNCIL.

5. WHERE A CONSTRUCTED FOOTPATH OR CYCLEWAY EXISTS WITHIN THE VERGE, PROTECTIVE FENCING INCLUDING THE CONCRETE PEDESTALS SHALL BE ERECTED TO PROVIDE A CLEAR AND UNOBSTRUCTED SET BACK OF 600mm FROM EACH SIDE OF THE FOOTPATH/CYCLEWAY IN ALL CASES TO ENSURE SAFE PASSAGE FOR CYCLISTS AND PEDESTRIANS.

6. IF THERE IS NO CONSTRUCTED PUBLIC FOOTPATH ON THE VERGE A FENCED CLEARWAY OF 1.8m IN WIDTH SHALL BE MAINTAINED FOR THE ENTIRE FRONTAGE OF THE LEASE TO ALLOW FOR CYCLISTS AND PEDESTRIANS.

7. ANY DEVIATIONS FROM THE DISTANCES SPECIFIED IN THIS CLAUSE DEEMED NECESSARY BECAUSE OF LOCAL RESTRAINTS REQUIRE PRIOR APPROVAL FROM QPRC.

8. ACCESS GATES INTO THE SITE SHALL SWING INTO THE SITE AND NOT BE CAPABLE OF BLOCKING PEDESTRIAN ACCESS ALONG THE VERGE OR VEHICULAR TRAFFIC ON THE ROAD.

9. FENCING SHALL NOT BE REMOVED FOR SERVICE INSTALLATION ACROSS THE VERGE WITHOUT PRIOR APPROVAL FROM COUNCIL FOR THE SERVICE INSTALLATION.

10. WHERE APPROVAL HAS BEEN GRANTED, THE FENCE SHALL BE REALIGNED TO PROVIDE A LANE FOR SERVICE TRENCHING BUT FENCES SHALL BE RE-ERECT TO ENCLOSE TREES BEFORE TRENCHING COMMENCES. UPON COMPLETION OF TRENCHING, THE FENCE SHALL BE RETURNED TO ITS ORIGINAL ALIGNMENT.

EXISTING TREES

1. ALL TREES LOCATED IN THE ROAD RESERVE, VERGE, PUBLIC OPEN SPACE AND ON UNLEASED TERRITORY LAND, SHALL BE RETAINED AND MUST REMAIN UNDAMAGED. THE LMPP PROCESS REQUIRES THE COORDINATOR TO IDENTIFY ANY TREES THAT MAY BE AFFECTED BY THE WORKS AND TO SUBMIT A REQUEST FOR APPROVAL TO PROCEED WITH THE WORK CLEARLY IDENTIFYING THE NATURE OF THE WORK AFFECTING THE TREE AND PROTECTIVE MEASURES PROPOSED TO MINIMISE DAMAGE TO THE TREE. WRITTEN AUTHORISATION FROM QPRC IS REQUIRED PRIOR TO ANY WORK AFFECTING THE TREE TAKING PLACE. AUTHORISATION WILL BE SUBJECT TO:
   × EXISTING CANOPY CLEARANCE NOT BEING ALTERED;
   × CROWNS AND APEX OF CANOPIES NOT BEING ALTERED OR REDUCED;
   × LIFTING EQUIPMENT AND LOAD CAPABLE OF OPERATING IN A MANNER THAT IT CLEARS THE HEIGHT AND WIDTH OF THE TREE CANOPY WITHOUT DAMAGING THE CROWN, AND;
   × CONSTRUCTION EQUIPMENT CAN PASS BENEATH THE TREES' LOWEST LIMB THROUGH THE DESIGNATED DRIVEWAY ACCESS ROUTE.

2. THE MAJORITY OF TREE ROOTS GROW IN THE TOP 300mm OF SOIL. THESE ARE THE FEEDER ROOTS, OFTEN VERY FINE ROOTS THAT PROVIDE THE TREE WITH WATER, OXYGEN AND NUTRIENTS. THESE ROOTS TYPICALLY GROW FROM THE TRUNK OF THE TREE TO WELL BEYOND ITS 'DRIP-LINE' (THE CANOPY EDGE).

3. EXCAVATION WITHIN THE DRIP ZONE OF A TREE DOES CONSIDERABLE DAMAGE TO ITS ROOT SYSTEM. IT CAN AFFECT TREE STABILITY AND TREE HEALTH TO SUCH AN EXTENT THAT IT WILL LEAD TO THE DECLINE AND POSSIBLE DEATH OF THE TREE OVER A PERIOD OF YEARS.

4. EXCAVATION THAT OCCURS WITHIN THE DRIP ZONE OF A TREE SHALL BE RESTRICTED TO ONE SIDE OF THE TREE ONLY AND SHALL HAVE PRIOR APPROVAL FROM COUNCIL

5. WHERE EXCAVATION IS APPROVED, THE FOLLOWING MEASURES SHALL BE ADOPTED FOR TREE PROTECTION:
   × DO NOT SEVER LARGE ROOTS (>30mm DIAMETER) CLOSER THAN HALFWAY FROM THE DRIP-LINE TO THE TRUNK;
   × LOCATE THESE ROOTS BY HAND TRENCHING TO A DEPTH OF 300mm BEFORE ANY MECHANICAL TRENCHING IS UNDERTAKEN;
   × CUT ALL ROOTS CLEANLY WITH EQUIPMENT SPECIFICALLY DESIGNED FOR THIS PURPOSE OR BY SUITABLE PRUNING EQUIPMENT;
   × PROTECT ROOTS EXPOSED FROM DESICCATION BY LIGHTLY WATERED OR COVERING WITH HESSIAN, WHICH MUST BE KEPT MOIST, AND
   × MAINTAIN THE GOOD HEALTH OF THE TREES THAT HAVE HAD DISTURBANCE IN THEIR ROOT ZONE BY CONTINUAL WATERING, AT NO TIME SHALL THE DISTURBED AREA BE ALLOWED TO DRY OUT TO THE DETRIMENT OF THE TREES HEALTH.

SITE ACCESS

1. SITE ACCESS SHALL BE BY THE EXISTING DRIVEWAY ACCESS POINTS FOR THE WORKS.

2. IN SOME CASES CONSIDERATION MAY BE GIVEN TO ALLOWING NEW ACCESS POINTS ACROSS PUBLIC LAND, HOWEVER, ALTERNATIVE OR ADDITIONAL ACCESS POINTS REQUIRE APPROVAL FROM COUNCIL. WHERE APPROVAL HAS BEEN GRANTED, THE SITE ACCESS SHALL BE POSITIONED MIDWAY BETWEEN TWO EXISTING TREE TRUNKS DEPENDENT ON THE DISTANCE BETWEEN TREES. ACCESS SHALL NOT OCCUR ON TWO SIDES OF A TREE WITHIN THE APPROVED CLEARANCE DIMENSION.

3. CONSTRUCTION TECHNIQUE SHALL MINIMISE THE NEED FOR EXCAVATION ACROSS THE VERGE.

4. ACCESS ACROSS ADJOINING PUBLIC OPEN SPACES, PARKS, RECREATIONAL RESERVES, ADJOINING PROPERTIES E.G. SCHOOL PLAYGROUNDS, COMMUNITY HALLS ETC, IS PROHIBITED WITHOUT PRIOR WRITTEN AUTHORISATION FROM COUNCIL, AND ANY OTHER ASSET OWNER WHERE APPLICABLE.

SERVICES AND UTILITIES TO SITE

1. THE COORDINATOR SHALL COORDINATE AND COLLATE ALL APPROVALS FOR PROPOSED SERVICES WITHIN THE AREA.

2. APPROVAL FOR TRENCH LOCATIONS AND EXCAVATIONS WITHIN THE VERGE SHALL BE OBTAINED THROUGH THE RELEVANT COUNCIL AGENCIES AT THE PLANNING AND DESIGN STAGES. APPROVAL IS SUBJECT TO THE FOLLOWING REQUIREMENTS:
   × IF THE PROPOSED EXCAVATION IS WITHIN THE CANOPY SPREAD OF ANY TREE, BORING OR TUNNELING BELOW THE ROOT ZONE MUST BE UNDERTAKEN;
   × SHARED TRENCHING FOR SERVICES IS MANDATORY;
   × THE NUMBER OF VERGE CROSSINGS SHALL BE MINIMISED;
   × EXCAVATION FOR SERVICES ACROSS VERGE (I.E. AT RIGHT ANGLES TO KERB OR PROPERTY LINE) SHALL BE MIDWAY BETWEEN THE TREE TRUNKS
   × ANY SERVICE INSTALLATION WITHIN 5.0m OF AN EXISTING TREE TRUNK, OR WITHIN THE TREE CANOPY, REQUIRES PRIOR APPROVAL.

SERVICES AND UTILITIES ALONG ROAD RESERVES

3. THE COORDINATOR SHALL COORDINATE ALL SERVICE APPROVALS: APPROVAL BYCOUNCIL FOR TRENCH LOCATIONS SHALL BE OBTAINED AS PART OF THE LMPP PROCESS.

4. TO MINIMISE DAMAGE AND/OR DISTURBANCES TO THE ROOTS OR ROOT ZONE AND SUBJECT TO APPROVAL BY COUNCIL, ANY NEW OR UPGRADED SERVICES PARALLEL TO THE KERB OR PROPERTY LINE SHALL BE INSTALLED ON THE FOLLOWING ALIGNMENTS:
   × WITHIN ROAD PAVED AREA;
   × BELOW THE ROOT ZONE IF THE EXCAVATION REQUIRED IS WITHIN THE CANOPY SPREAD OF ANY TREE;
   × BELOW THE EXISTING FOOTPATH ON THE PROPERTY LINE, AND
   × IMMEDIATELY BEHIND THE KERB.

IRRIGATION

1. ACT PARKS & CONSERVATION (P&C) ACTIVELY DISCOURAGES THE USE OF IN-GROUND IRRIGATION SYSTEMS AND GENERALLY DOES NOT ENDORSE THEIR INSTALLATION IN THE VERGE. HOWEVER, A SYSTEM OF QUICK-COUPLERS AT THE LEASE EDGE OF THE VERGE MAY BE INSTALLED SUBJECT TO APPROVAL OF THE IRRIGATION PLAN BY P&C. A PREFERRED ALTERNATIVE IS THE PLANTING OF DROUGHT TOLERANT GRASSES AND SHRUBS THAT ARE NOT RELIANT ON WATERING TO SURVIVE.

VERGE INFRASTRUCTURE CONDITION AND RESTORATION

1. THE COORDINATOR SHALL NOTIFY COUNCIL AT THE COMPLETION OF WORK AND OBTAIN APPROVAL PRIOR TO COMMENCEMENT OF ANY VERGE RESTORATION. DURING VERGE RESTORATION, TOPSOIL SHALL NOT BE REMOVED AND THE SOIL LEVEL SHALL NOT BE CHANGED WITHIN THE DRIP ZONE OF TREES OR AS OTHERWISE APPROVED AND, UPON COMPLETION OF THE WORKS, VERGES SHALL HAVE ESTABLISHED APPROPRIATE GRASS COVER AS APPROVED BY P&C, E.G. DRYLAND GRASS, NATIVE GRASS OR COUCH.

2. IF THE STANDARD OF GRASS COVER ON THE VERGE NEEDS TO BE IMPROVED, THE FOLLOWING REQUIREMENTS SHALL APPLY:
   × WITHIN THE ROOT ZONE OF TREES, LIGHTLY CULTIVATE THE SOIL IN ONE DIRECTION ONLY TO BETWEEN 25mm TO 50mm DEPTH (50mm MAXIMUM TO MINIMISE DAMAGE TO TREE ROOTS), AVOID MAJOR ROOTS AND KEEP A MINIMUM OF 1.0m AWAY FROM TREE TRUNKS;
   × OUTSIDE THE ROOT ZONE OF TREES NORMAL CULTIVATION PRACTICE APPLIES;
   × ADD 'B TYPE' TOPSOIL AT 25mm TO 50mm DEPTH LEVEL THE TOPSOIL AND ADD NPK FERTILISER (EQUIVALENT TO MULTIGRO) AT 40 GSM (grams per meter^2) AND;
   × LAY TURF OR SOW SEED OF SUITABLE DROUGHT TOLERANT SPECIES AS SPECIFIED IN THE STANDARD SPECIFICATION FOR URBAN INFRASTRUCTURE WORKS. KEEP MOIST DURING ESTABLISHMENT.

3. ALL RESTORATION WORK SHALL BE APPROVED BY COUNCIL AND CARRIED OUT BY APPROVED OPERATORS.

LEGEND

- SITE BOUNDARY
- SITE / SECURITY FENCE
- VERGE FENCE
- SITE GATES (INDICATIVE) -GATES TO OPEN INTO SITE
- STABILISED CONSTRUCTION ENTRANCE LOCATION
- SITE SHEDS (INDICATIVE)
- EXISTING CONTOUR
- EXISTING TREE TO BE RETAINED ×(INDICATIVE SYMBOL SHOWN)
- EXISTING TREE TO BE REMOVED

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B	DEVELOPMENT APPLICATION	24.06.2022	DA
A	DEVELOPMENT APPLICATION	21.03.2022	MN

Scales

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Height Datum	AHD	Approved Signature	

Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: LANDSCAPE MANAGEMENT NOTES AND LEGEND

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EV	0900	B

REFERENCE:

1. FOR LANDSCAPE MANAGEMENT NOTES AND LEGEND REFER DRAWING EV-0900



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Height Datum	AHD	Approved Signature	

Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: LANDSCAPE MANAGEMENT AND PROTECTION PLAN

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EV	0901	B

POLLUTION CONTROL NOTES

DEVELOPMENT CONTACT DETAILS

PROJECT MANAGER: TBC

SITE MANAGER: TBC

TOTAL SITE AREA: 4960.62 m²

SEDIMENT CONTROL NOTES

1. SEDIMENT AND EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH SOIL AND CONSTRUCTION MANUAL, VERSION 1, 1ST EDITION, MARCH 2004 AND FULLY OPERATIONAL PRIOR TO STRIPPING OF SITE TOP SOIL.
2. STOCK PILE/S TO BE LOCATED AWAY FROM DRAINAGE LINES AND SURFACE FLOW PATHS. CONTOURED STRIATIONS OR FURROWS TO BE PROVIDED TO STOCK PILES TO MINIMISE EROSION.
3. STABILISED CONSTRUCTION ENTRANCE TO BE CONSTRUCTED PRIOR TO ACCESS TO SITE BY CONSTRUCTION VEHICLES. AGGREGATE TO BE TURNED WHEN SEDIMENT BUILDS UP AND RENEWED WHEN REQUIRED.
4. WHERE UNDERGROUND STORMWATER DRAINAGE IS INSTALLED TO INTERNAL ROADWORKS, PROVIDE INLET FILTER.
5. ENVIRONMENT PROTECTION AGREEMENT TO BE TAKEN OUT BY CONTRACTOR WITH ENVIRONMENT PROTECTION AUTHORITY. (TELEPHONE 132 281)
6. ALL NEW CONSTRUCTION WORK MUST BE CONTAINED WITHIN THE SITE EXCEPT FOR APPROVED SERVICE CONNECTIONS AND ROADWORKS.
7. LIMIT ACCESS TO SITE DURING AND IMMEDIATELY AFTER WET WEATHER.
8. REGULARLY REMOVE ANY SOIL FROM ROADS ADJACENT TO THE SITE.
9. NO STORAGE OF CONSTRUCTION MATERIALS, PARKING OF VEHICLES NOR EQUIPMENT PERMITTED OUTSIDE OF BLOCK WITHOUT TCCS APPROVAL.
10. NO SITE SHEDS, STORAGE SHEDS OR SITE AMENITIES TO BE ERECTED OUTSIDE OF BLOCK WITHOUT TCCS APPROVAL.
11. PROVIDE KERBSIDE FILTER ROLL TO EXISTING SUMPS WHERE INDICATED.
12. KERBSIDE FILTER ROLLS TO BE REMOVED, CLEANED AND REINSTATED ON A WEEKLY BASIS AT A MINIMUM. TRAPPED SEDIMENT ABOUT SUMPS ALSO TO BE REMOVED. CLEANING IS ALSO TO TAKE PLACE IMMEDIATELY AFTER PERIODS OF RAINFALL DURING CONSTRUCTION.
13. ALL SERVICE TRENCHES TO BE BACK FILLED WITHIN 24 HOURS OF INSPECTION.
14. EXCESS SOIL IS TO BE DISPOSED AT AN ENVIRONMENT PROTECTION AUTHORITY APPROVED LOCATION.
15. THE SITE FOREMAN IS TO CONTACT THE ENVIRONMENT PROTECTION AUTHORITY (132281) TO ARRANGE A SITE INSPECTION AND ENDORSEMENT OF SEDIMENT AND EROSION CONTROL MEASURES PRIOR TO WORKS COMMENCING.
16. THE SITE FOREMAN IS TO CONTACT THE ENVIRONMENT PROTECTION AUTHORITY (132281) TO DISCUSS ANY PROPOSED MAJOR CHANGES TO SEDIMENT AND EROSION CONTROLS ON SITE PRIOR TO IMPLEMENTING THE CHANGES.
17. THE SITE FOREMAN IS TO ENSURE CONTRACTOR'S ACCESS AND EXIT THE SITE USING ONLY ENVIRONMENT PROTECTION AUTHORITY APPROVED STABILISED ACCESS/EXIT POINTS AS DETAILED ON ENDORSED SEDIMENT AND EROSION CONTROL PLANS.
18. FOR SITES 1 HECTARE OR GREATER, A TEMPORARY SEDIMENT POND SHALL BE CONSTRUCTED. THE SEDIMENT POND SHALL BE SIZED TO HOLD 150m³ PER HECTARE IN ACCORDANCE WITH LANDCOM'S MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION (THE BLUE BOOK). DISCHARGE FROM THE POND IS PERMISSIBLE WHEN THE WATER pH IS 6.5-8.5 AND IS CLARIFIED TO OR AT BELOW 60mg/L (50NTU). IF SEDIMENT LEVEL IS GREATER, THEN PRIOR TO DISCHARGE, THE DAM MUST BE DOSED WITH EITHER ALUM OR GYPSUM AND ALLOWED TO SETTLE UNTIL THE SEDIMENT IS LESS THAN 60mg/L (50NTU).
19. WATER LEVEL TO BE MAINTAINED AT LESS THAN 20% OF CAPACITY TO ALLOW RUNOFF STORAGE DURING A RAIN EVENT.
20. REGULAR DREDGING OF THE DAM MUST BE CARRIED OUT TO REMOVE SILT.
21. SITE DRAWING AND DETAILS MUST BE PROVIDED TO ENVIRONMENT PROTECTION AUTHORITY, FOR APPROVAL PRIOR TO WORKS COMMENCING.

WASTE NOTES

1. WASTE ENCLOSURE(S) ARE TO BE USED FOR ALL RUBBISH ON SITE AND RUBBISH REMOVED FROM ENCLOSURE(S) WHEN REQUIRED OR FULL.

DISPOSAL OF SPOIL

PRIOR TO ANY WORKS COMMENCING INVOLVING EXPORT OF SPOIL GREATER THAN 100m³, THE FOLLOWING INFORMATION MUST BE PROVIDED TO THE COUNCIL:

1. WHERE THE SPOIL WILL ORIGINATE FROM: WHO IS DISPOSING OF THE SPOIL: WHERE THE SPOIL WILL BE TAKEN: THE AMOUNT OF SPOIL TO BE TAKEN AWAY;
2. MOVEMENT DATES AND CONTACT DETAILS: DESCRIPTION OF THE TYPE OF SPOIL TAKEN AWAY:DETAILS OF HOW RECORDS WILL BE KEPT; AND
3. TIME FRAME TO COMPLETE THE WORKS TO THE SATISFACTION OF THE ENVIRONMENT PROTECTION AUTHORITY.
4. SPOIL MAY BE TAKEN TO AN APPROVED LANDFILL SITE WITHOUT APPROVAL IF THE SPOIL IS TO BE TAKEN TO AN AREA OTHER THAN AN APPROVED LANDFILL SITE, ENSURE THE ACCEPTOR OF THE SPOIL IS AWARE OF THE REQUIREMENTS OF LOCAL APPROVING BODY.

NOISE

ENSURE ALL BUILDING WORK THAT GENERATES NOISE IS CONDUCTED WITHIN THE TIME PERIODS DETAILED IN SCHEDULE 2 OF THE ENVIRONMENT PROTECTION REGULATIONS 2005.

BUILDING WORK DETAILS	MONDAY TO SATURDAY	SUNDAY AND PUBLIC HOLIDAYS
INDUSTRIAL, CITY AND TOWN CENTRE AREAS	6AM TO 8PM	6AM TO 8PM
ANY OTHER AREA WHEN WORK COMPLETED WITHIN 2 WEEKS	7AM TO 6PM	8AM TO 8PM
ANY OTHER AREA WHEN WORK NOT COMPLETED WITHIN 2 WEEKS	7AM TO 6PM	CONSTRUCTION WORK MUST NOT EXCEED NOISE STANDARD

IN ADDITION:

1. SCHEDULE NOISY ACTIVITIES FOR THE LEAST SENSITIVE TIMES OF THE DAY SUCH AS MID-MORNING AND MID-AFTERNOON.
2. SELECT MACHINERY THAT PRODUCE LESS NOISE; AND
3. ENSURE MACHINERY IS WELL MAINTAINED.

DUST MANAGEMENT

WHERE BUILDING WORK GENERATES DUST, ALL REASONABLE AND PRACTICABLE MEASURES SHOULD BE TAKEN TO MINIMISE THAT DUST. THIS CAN OFTEN BE ACHIEVED BY:

1. RETAINING EXISTING VEGETATION WHERE POSSIBLE.
2. STRIPPING AREAS PROGRESSIVELY AND ONLY WHERE IT IS NECESSARY FOR WORKS TO OCCUR.
3. EMPLOYING STABILISING METHODS SUCH AS MATTING, GRASSING OR MULCH.
4. DAMPENING THE GROUND WITH A LIGHT WATER SPRAY (CONTACT THE ENVIRONMENT PROTECTION AUTHORITY FOR REQUIREMENTS DURING EXTREME DROUGHT CONDITIONS).
5. ROUGHENING SURFACE OF EXPOSED SOIL.
6. COVERING STOCKPILES AND LOCATING THEM WHERE THEY ARE PROTECTED FROM THE WIND.
7. RESTRICTING VEHICLE MOVEMENTS.
8. COVERING THE LOAD WHEN TRANSPORTING MATERIAL.
9. CONSTRUCTING WIND BREAKS SUCH AS WIND FENCES IN ACCORDANCE WITH THE BLUE BOOK.
10. A WATER CART OR SUFFICIENT WATER SPRAYS SHALL BE MADE AVAILABLE AT ALL TIMES. IN ADVERSE CONDITIONS WHEN DUST CANNOT BE ADEQUATELY CONTROLLED WHEN WORKS ARE BEING UNDERTAKEN, WORKS WILL CEASE IN THESE AREAS UNTIL CONDITIONS IMPROVE.
11. WATER SHALL BE APPLIED TO SUPPRESS DUST FROM OPEN EARTHWORKS AS WELL AS UNPROTECTED STOCKPILES.
12. AREAS OF COMPLETED EARTHWORKS SHALL BE PROGRESSIVELY REHABILITATED WITH DRYLAND GRASS AND FENCED OFF AS SOON AS PRACTICABLE TO PREVENT FURTHER EROSION.
13. THE CONTRACTOR SHALL CONTACT ICON WATER TO OBTAIN RECYCLED WATER FROM THE LOWER MOLONGLO.
14. THE CONTRACTOR IS TO CONTACT THE WATER RESOURCES UNIT TO OBTAIN AN EXEMPTION TO USE NON-POTABLE WATER FROM ON OR OFF THE SITE IF REQUIRED.
15. DURING WINDY CONDITIONS, THE CONTRACTOR IS TO MINIMISE DUST GENERATING ACTIVITIES AND REGULARLY APPLY DUST SUPPRESSING MEASURES. IF DUST SUPPRESSION MEASURES FAIL THE CONTRACTOR IS TO CEASE DUST GENERATING ACTIVITIES.

FIRE

1. BURNING OF WASTE MATERIALS ON THE SITE, SUCH AS PLASTICS, CHEMICALS OR WOOD THAT MAY BE PAINTED, CHEMICALLY TREATED OR CONTAMINATED WITH CHEMICALS IS ILLEGAL.
2. A FIRE MAY BE PERMITTED FOR HEATING PURPOSES PROVIDED IT IS IN A BRAZIER OR CONSTRUCTED FIREPLACE. ONLY SEASONED, UNTREATED TIMBER CAN BE BURNED FOR HEATING PURPOSES.

MAINTENANCE SCHEDULE

DAILY:

1. CHECK AND REINSTATE SILT CONTROL FENCES.
2. SWEEP AND REMOVE DIRT AND ANY OTHER BUILDING MATERIAL FROM GUTTERS, FOOTPATHS AND ROADWAYS ADJACENT TO THE SITE BY CLOSE OF BUSINESS AND PRIOR TO RAIN AND AS REQUIRED. ALL NECESSARY STEPS SHOULD BE TAKEN THAT ARE PRACTICAL AND REASONABLE TO MINIMISE DUST POLLUTION.

MONTHLY:

1. STABILISED CONSTRUCTION ENTRANCE AGGREGATE TO BE TURNED AND RENEWED.

DURING/AFTER WET WEATHER:

1. LIMIT CONSTRUCTION VEHICLE ACCESS TO SITE DURING AND IMMEDIATELY FOLLOWING WET WEATHER. CHECK AND REINSTATE SEDIMENT EROSION CONTROL MEASURES AND CHECK ROAD.

LEGEND

- SITE BOUNDARY
- SITE / SECURITY FENCE
- VERGE FENCE
- SITE GATES (INDICATIVE) -GATES TO OPEN INTO SITE
- STABILISED CONSTRUCTION ENTRANCE LOCATION
- SITE SHEDS (INDICATIVE)
- EXISTING CONTOUR
- EXISTING TREE TO BE RETAINED ×(INDICATIVE SYMBOL SHOWN)
- EXISTING TREE TO BE REMOVED
- SF — SILT FENCE (PRIOR TO ANY EXCAVATION)
- KIF — KERB INLET FILTER
- SEDIEMNT & EROSION CONTROL POND
- HB — HAY BALES

File Name: P:\2021\211286_L768-Thedbo\04_CAD\4.2_Drawings\CIV\211286-drg-civ-ev-0910.dwg

Rev	Description	Date	Drawn By
B	DEVELOPMENT APPLICATION	24.06.2022	DA
A	DEVELOPMENT APPLICATION	21.03.2022	MN

Scales

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Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 21/03/2022
Height Datum	AHD	Approved Signature	

Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: SEDIMENT EROSION CONTROL NOTES AND LEGEND

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EV	0910	B

REFERENCE:

1. FOR SEDIMENT EROSION CONTROL NOTES AND LEGEND REFER DRAWING EV-0910



NOTE:

POSITIONS SHOWN ARE INDICATIVE ONLY AND SUBJECT TO BUILDER INPUT

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Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: SEDIMENT EROSION CONTROL PLAN

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EV	0911	B

BULK EARTHWORKS VOLUMES

CUT: 9,850m³

FILL: 50m³

BULK EARTHWORK NOTES

GENERAL

1. ALL BULK VOLUMES ARE SOLID VOLUMES AND DO NOT INCLUDE BULKING FACTORS OR TOPSOIL ALLOWANCE.
2. REFER TO ARCHITECTURAL DRAWINGS FOR SETOUT.
3. ALL EARTHWORKS TO BE UNDERTAKEN IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3798 WITH MINIMUM COMPACTION OF 95% MMDD TO ALL BUILDING PLATFORMS AND ROAD WORKS.
4. CONTRACTOR TO PROVIDE LEVEL 1 CERTIFICATION OF FILL BY SUITABLY QUALIFIED GEOTECHNICAL ENGINEER.
5. CONTRACTOR TO CONFIRM ALL BULK LEVELS PRIOR TO COMMENCEMENT OF EARTHWORKS.

ASSUMPTION

1. NO TOP SOIL STRIPPING HAS BEEN ALLOWED FOR IN THE BEW VOLUMES.
2. 200mm OVER EXCAVATION UNDER THE FINISHED FLOOR LEVEL.
3. ALL BATTER AT 60 DEGREES TO 1.5m BELOW THE EXISTING SURFACE.
4. THE TOP 1.5m OF ANY PROPOSED BATTERS TO BE AT 45 DEGREES.

STRIPPING

1. SITE SHOULD BE STRIPPED AND REINSTATED PROGRESSIVELY AS REQUIRED TO MINIMISE EXPOSED SURFACES.
2. STRIP ALL GRASS COVER AND TOP SOIL TO EXPOSE UNDERLYING SOIL IN AREAS TO BE REGRADED.
3. TOP SOIL TO BE STOCKPILED FOR FUTURE USE IN LANDSCAPING.

FILL PLATFORMS

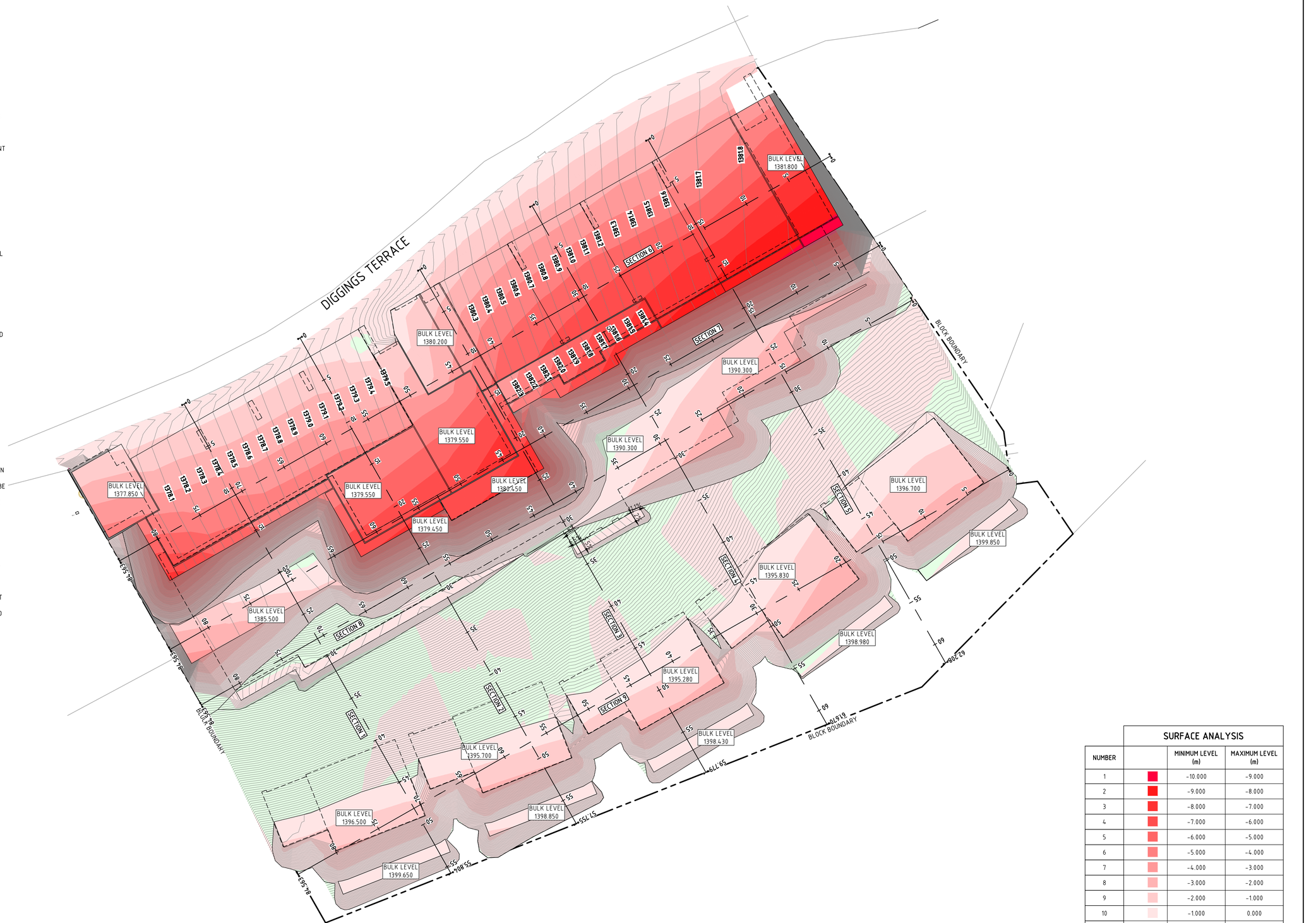
1. FOR STRIPPED SLOPES STEEPER THAN 12.5% OVER WHICH FILL PLATFORMS ARE TO BE CONSTRUCTED, PROVIDE BENCHING OF NOT MORE THAN 300mm DEPTH.
2. FILL IS TO BE PLACED AND COMPACTED IN LEVEL 150MM LAYERS MAXIMUM COMPACTED THICKNESS.
3. STRUCTURAL FILL PLATFORMS TO BE COMPACTED TO 95% STANDARD DRY DENSITY (90% MMDD). NON STRUCTURAL PLATFORMS TO BE COMPACTED TO 90% STANDARD DRY DENSITY.
4. FILL MATERIAL TO BE FREE OF ORGANICS, BUILDERS DEBRIS, OTHER DELETERIOUS MATERIAL AND SILT. MATERIAL TO BE UNIFORM MOISTURE CONDITION PRIOR TO PLACEMENT AND COMPACTION.
5. MAX ROCK FRAGMENT SIZE TO BE 75MM DIAMETER WITHIN FILL MATERIAL.
6. FILL PLATFORMS TO BE CONSTRUCTED WITH 1 VERTICAL TO 3 HORIZONTAL BATTER UNLESS SPECIFIED OTHERWISE.
7. TERRACED CUT AND FILL AREAS ARE TO BE CONSTRUCTED FROM LOWER LEVEL TO UPPER LEVEL WITH OVER FILLING. FOLLOWED BY CUTTING BACK AS NECESSARY.
8. ALL FILL SURFACES TO BE SHAPED TO PROVIDE DRAINAGE AND PREVENT PONDING OF SURFACE WATER.

CUT PLATFORMS

1. CUT FACES WITHIN SITE LESS THAN 2.5M IN HEIGHT TO BE VERTICAL IN ACCORDANCE WITH GEOTECHNICAL REPORT. BATTER BACK TOP 0.5m AT 1 VERTICAL TO 1 HORIZONTAL. CUT FACES ALONG BOUNDARY TO BE 1 VERTICAL TO 1 HORIZONTAL UNLESS SHORING IS PROVIDED.
2. CUT FACES GREATER THAN 2.5M IN HEIGHT TO HAVE PORTION ABOVE 2.5M BATTERED BACK AT 1 VERTICAL TO 2 HORIZONTAL.
3. CUT PLATFORMS TO BE PROOF ROLLED. CUT PLATFORMS TO BE SHAPED TO PROVIDE DRAINAGE AND PREVENT PONDING OF SURFACE WATER. CUT FACES ALONG BOUNDARY TO BE 1 VERTICAL TO 1 HORIZONTAL.

TESTING

1. TESTING TO BE CARRIED OUT IN ACCORDANCE WITH AS3798 BY NATA REGISTERED LABORATORY.
2. TESTING TO BE UNDERTAKEN PROGRESSIVELY THROUGHOUT BULK EARTHWORKS.
3. TESTING TO BE DISTRIBUTED UNIFORMLY THROUGHOUT DEVELOPMENT ALLOW 1 TEST PER 50m³ FILL.
4. ANY PLATFORMS NOT ACHIEVING MINIMUM TEST RESULTS ARE TO BE STRIPPED BACK, RE-COMPACTED, AND RE-TESTED UNTIL REQUIRED COMPACTION LEVELS ACHIEVED.



REFERENCE:

1. FOR EARTHWORKS LONGITUDINAL SECTIONS REFER DRAWINGS EW-0211 TO EW-0217

	SURFACE ANALYSIS		
NUMBER		MINIMUM LEVEL (m)	MAXIMUM LEVEL (m)
1		-10.000	-9.000
2		-9.000	-8.000
3		-8.000	-7.000
4		-7.000	-6.000
5		-6.000	-5.000
6		-5.000	-4.000
7		-4.000	-3.000
8		-3.000	-2.000
9		-2.000	-1.000
10		-1.000	0.000
11		0.000	1.000
12		1.000	2.000

Rev	Description	Date	Drawn By
D	DEVELOPMENT APPLICATION	29.06.2022	DA
C	DEVELOPMENT APPLICATION	24.06.2022	DA
B	FOR INFORMATION	27.05.2022	DA
A	DEVELOPMENT APPLICATION	21.03.2022	MN

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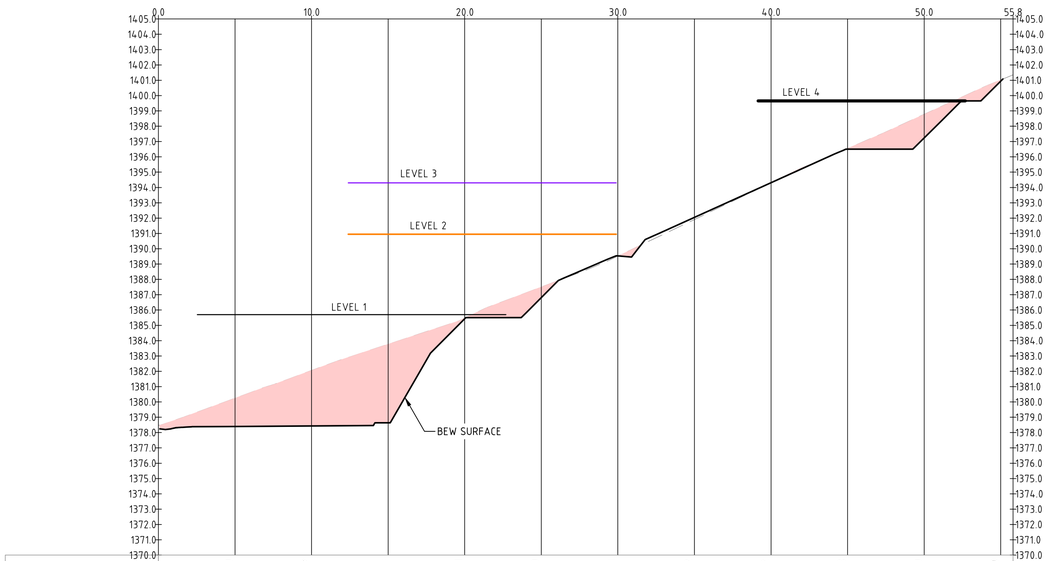
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Height Datum	AHD	Approved Signature	

Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: CONCEPT EARTHWORKS CUT AND FILL VOLUMES PLAN

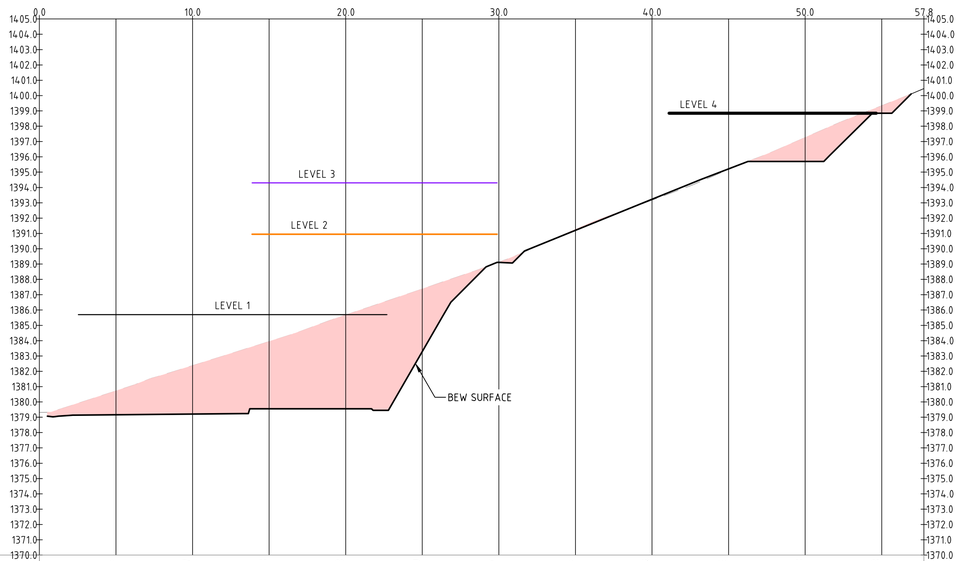
Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EW	0201	D

File Name: P:\2021\211286_1768-Thredbo\04_CAD\4.2_Drawings\CIV\211286-drg-civ-ew-0201.dwg



DESIGN LEVELS		1378.399	1378.432	1378.634	1385.431	1386.809	1389.531	1392.052	1394.312	1396.500	1397.239	1400.939
EXISTING LEVELS	1378.479	1380.244	1382.055	1383.769	1385.474	1387.502	1389.521	1391.911	1394.317	1396.547	1398.776	1401.021	1401.355
DEPTH		-1.845	-3.623	-5.135	-0.043	-0.693	0.010	0.141	-0.006	-0.047	-1.538	-0.082	
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	55.804

PROFILE OF ALIGNMENT SECTION 1
(VERT SCALE 1:200, HOR SCALE 1:200, VERT EXAG 1:1)
FROM: CH 0.000 TO CH 55.804



DESIGN LEVELS		1379.164	1379.207	1379.550	1379.550	1383.279	1389.107	1391.204	1393.228	1395.215	1395.700	1398.850	
EXISTING LEVELS	1379.315	1380.721	1382.371	1383.943	1385.673	1387.376	1389.120	1391.257	1393.175	1395.174	1397.260	1399.337	1400.459
DEPTH		-1.557	-3.164	-4.393	-6.123	-4.097	-0.013	-0.053	0.052	0.041	-1.560	-0.487	
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	57.755

PROFILE OF ALIGNMENT SECTION 2
(VERT SCALE 1:200, HOR SCALE 1:200, VERT EXAG 1:1)
FROM: CH 0.000 TO CH 57.755

File Name: P:\2021\211286_1768-Thredbo\04_CAD\4.2_Drawings\CIV\211286-drg-civ-ew-0211.dwg

Rev	Description	Date	Drawn By
B	DEVELOPMENT APPLICATION	29.06.2022	DA
A	DEVELOPMENT APPLICATION	24.06.2022	DA

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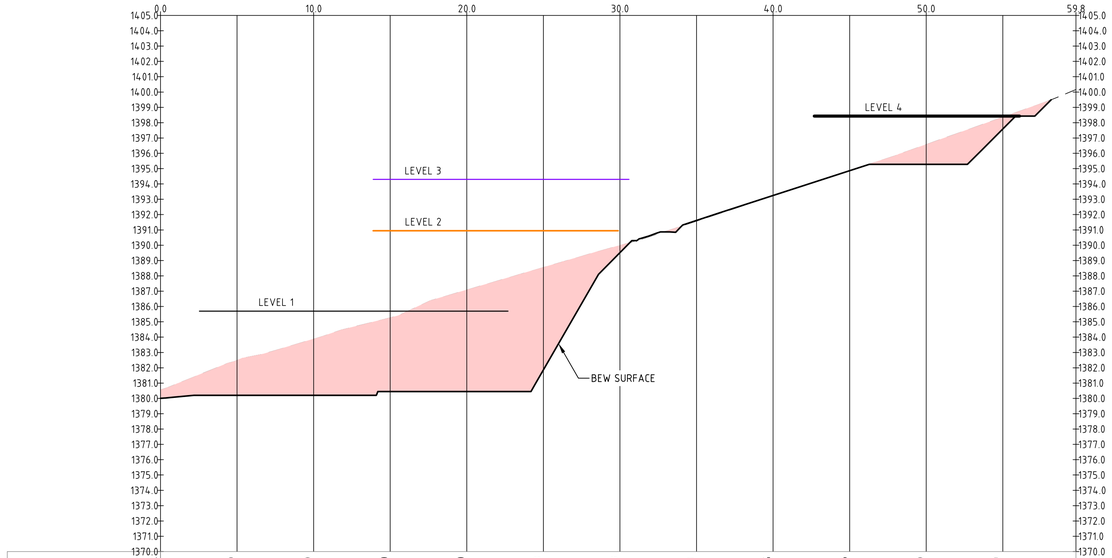
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Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

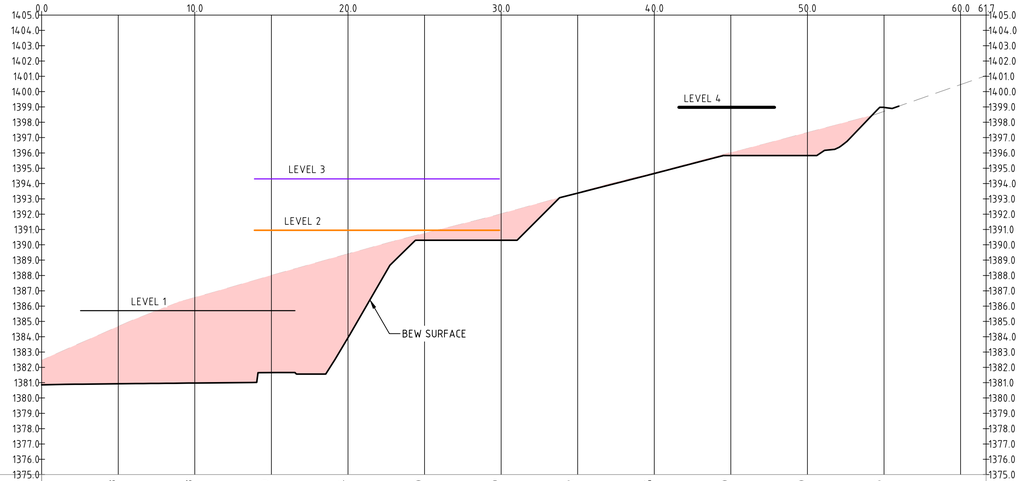
Drawing Title: EARTHWORKS LONGITUDINAL SECTIONS SHEET 1

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EW	0211	B



DESIGN LEVELS	1380.604	1380.200	1380.200	1380.450	1380.450	1381.853	1389.513	1391.613	1393.245	1394.866	1395.280	1397.589	
EXISTING LEVELS	1380.555	1382.483	1383.874	1385.267	1387.081	1388.550	1389.988	1391.566	1393.266	1394.886	1396.578	1398.358	1400.162
DEPTH	-0.550	-2.283	-3.674	-4.817	-6.631	-6.698	-0.475	0.048	-0.021	-0.020	-1.298	-0.769	
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	59.779

PROFILE OF ALIGNMENT SECTION 3
(VERT SCALE 1:200, HOR SCALE 1:200, VERT EXAG 1:1)
FROM: CH 0.000 TO CH 59.779



DESIGN LEVELS	1380.861	1380.928	1380.978	1381.659	1383.934	1390.300	1390.300	1393.377	1394.655	1395.830	1398.975		
EXISTING LEVELS	1382.462	1384.668	1386.557	1387.999	1389.406	1390.747	1392.021	1393.408	1394.708	1396.019	1397.327	1398.714	1400.462	1401.046
DEPTH	-1.601	-3.740	-5.579	-6.340	-5.471	-0.447	-1.721	-0.031	-0.052	-0.189	-1.497	0.261	
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	61.670

PROFILE OF ALIGNMENT SECTION 4
(VERT SCALE 1:200, HOR SCALE 1:200, VERT EXAG 1:1)
FROM: CH 0.000 TO CH 61.670

File Name: P:\2021\211286_L768-Thedbo\04_CAD\4-2_Drawings\CIV\211286-drg-civ-ew-0212.dwg

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B	DEVELOPMENT APPLICATION	29.06.2022	DA
A	DEVELOPMENT APPLICATION	24.06.2022	DA

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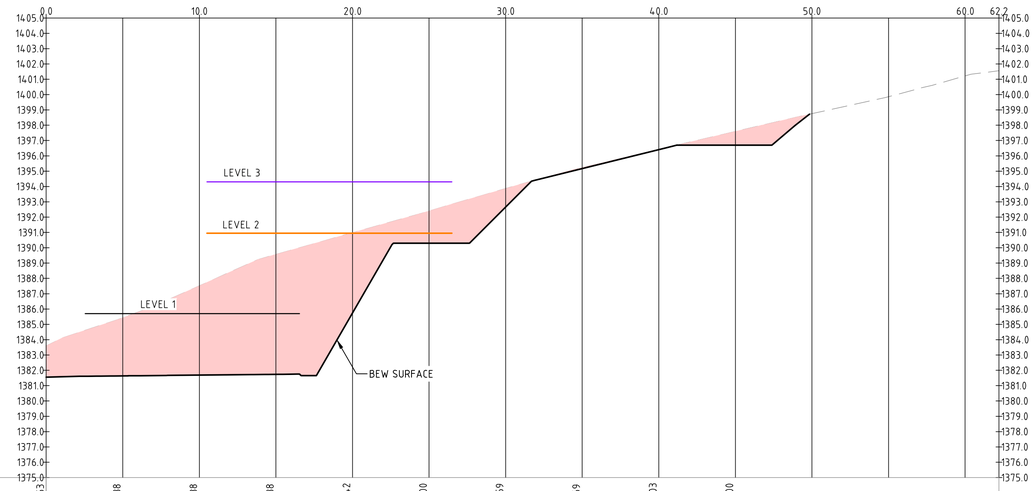
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Project Name and Location
MIXED USE DEVELOPMENT
THREDBO NSW

Drawing Title
EARTHWORKS
LONGITUDINAL SECTIONS SHEET 2

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EW	0212	B



DESIGN LEVELS	1381.553	1381.638	1381.688	1381.738	1385.142	1390.300	1392.659	1395.169	1396.403	1396.700			
EXISTING LEVELS	1383.592	1385.437	1387.520	1389.572	1390.984	1392.402	1393.868	1395.233	1396.427	1397.597	1398.754	1399.864	14.01.221	14.01.556
DEPTH	-2.038	-3.799	-5.832	-7.834	-5.842	-2.102	-1.209	-0.064	-0.024	-0.897				
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	62.208

PROFILE OF ALIGNMENT SECTION 5
(VERT SCALE 1:200, HOR SCALE 1:200, VERT EXAG 1:1)
FROM: CH 0.000 TO CH 62.208

File Name: P:\2021\211286_L768-Thredbo\04_CAD\4.2_Drawings\CIV\211286-drg-civ-ew-0213.dwg

Rev	Description	Date	Drawn By
B	DEVELOPMENT APPLICATION	29.06.2022	DA
A	DEVELOPMENT APPLICATION	24.06.2022	DA

Scales: 0 5 7.5 10m — 1:200 @ A1

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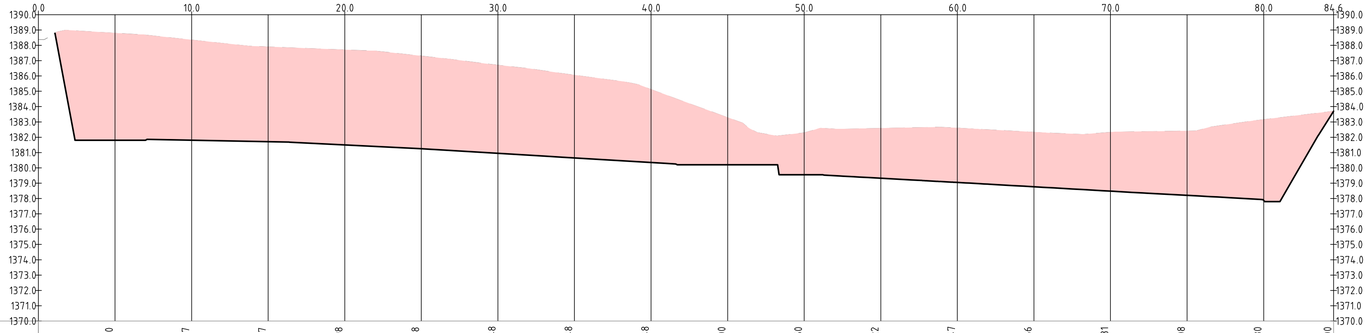
Status: NOT FOR CONSTRUCTION

Original Size	A1	Drawn By: MN	Drafting Check: DA
Date Plotted	29-Jun-22	Designed By: LT	Design Check: JM
Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 24/06/2022
Height Datum	AHD	Approved Signature	

Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: EARTHWORKS LONGITUDINAL SECTIONS SHEET 3

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EW	0213	B



DESIGN LEVELS		1381.800	1381.807	1381.707	1381.498	1381.248	1380.948	1380.648	1380.348	1380.200	1379.550	1379.322	1379.047	1378.766	1378.481	1378.208	1377.880	1383.700
EXISTING LEVELS	1388.382	1388.794	1388.350	1387.898	1387.704	1387.299	1386.707	1386.054	1385.118	1383.281	1382.286	1382.581	1382.599	1382.327	1382.323	1382.406	1383.153	1383.700
DEPTH		-6.994	-6.543	-6.191	-6.206	-6.052	-5.759	-5.406	-4.770	-3.081	-2.736	-3.258	-3.551	-3.562	-3.842	-4.198	-5.273	0.000
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	84.563

PROFILE OF ALIGNMENT SECTION 6
(VERT SCALE 1:200, HOR SCALE 1:200, VERT EXAG 1:1)
FROM: CH 0.000 TO CH 84.563

File Name: P:\2021\211286_L768-Thredbo\04_CAD\4.2_Drawings\CIV\211286-drg-civ-ew-0214.dwg

Rev	Description	Date	Drawn By
B	DEVELOPMENT APPLICATION	29.06.2022	DA
A	DEVELOPMENT APPLICATION	24.06.2022	DA

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0 5 7.5 10m
1:200 @ A1

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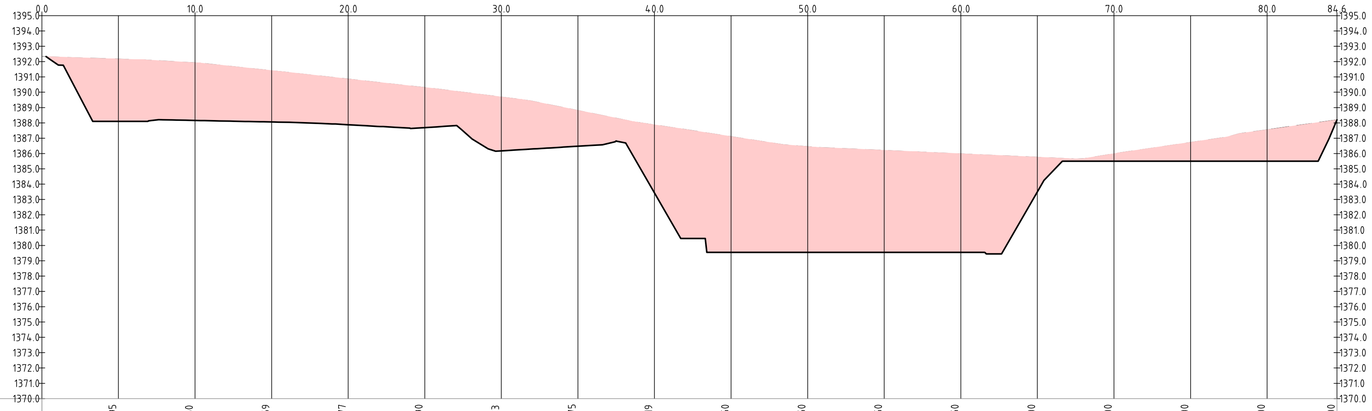
Status: NOT FOR CONSTRUCTION

Original Size	A1	Drawn By: MN	Drafting Check: DA
Date Plotted	29-Jun-22	Designed By: LT	Design Check: JM
Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 24/06/2022
Height Datum	AHD	Approved Signature	

Project Name and Location
MIXED USE DEVELOPMENT
THREDBO NSW

Drawing Title
EARTHWORKS
LONGITUDINAL SECTIONS SHEET 4

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EW	0214	B



DESIGN LEVELS		1388.095	1388.160	1388.059	1387.877	1387.690	1386.173	1386.475	1383.419	1379.550	1379.550	1379.550	1379.550	1383.500	1385.500	1385.500	1388.200
EXISTING LEVELS	1392.337	1392.176	1391.931	1391.418	1390.872	1390.312	1389.697	1388.819	1387.878	1387.116	1386.440	1386.213	1385.991	1385.767	1385.993	1386.732	1387.560	1388.200
DEPTH		-4.081	-3.772	-3.359	-2.994	-2.622	-3.524	-2.343	-4.459	-7.566	-6.910	-6.663	-6.441	-2.267	-0.493	-1.232	-2.060	0.000
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	84.563

PROFILE OF ALIGNMENT SECTION 7
(VERT SCALE 1:200, HOR SCALE 1:200, VERT EXAG 1:1)
FROM: CH 0.000 TO CH 84.563

File Name: P:\2021\211286_L768-Thredbo\04_CAD\4.2_Drawings\CIV\211286-drg-civ-ew-0215.dwg

Rev	Description	Date	Drawn By
B	DEVELOPMENT APPLICATION	29.06.2022	DA
A	DEVELOPMENT APPLICATION	24.06.2022	DA

Scales
0 5 7.5 10m
1:200 @ A1

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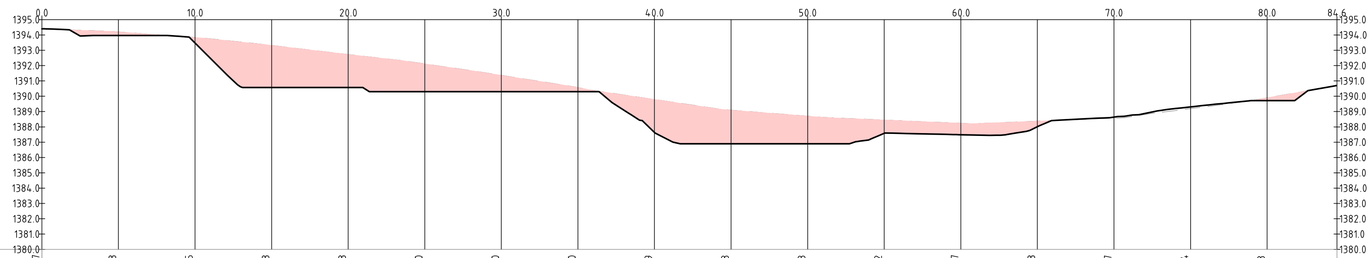
Status: NOT FOR CONSTRUCTION

Original Size	A1	Drawn By: MN	Drafting Check: DA
Date Plotted	29-Jun-22	Designed By: LT	Design Check: JM
Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 24/06/2022
Height Datum	AHD	Approved Signature	

Project Name and Location
MIXED USE DEVELOPMENT
THREDBO NSW

Drawing Title
EARTHWORKS
LONGITUDINAL SECTIONS SHEET 5

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EW	0215	B



DESIGN LEVELS	1394.397	1393.968	1393.475	1390.568	1390.568	1390.300	1390.300	1390.300	1387.629	1386.893	1386.893	1387.582	1387.487	1388.008	1388.637	1389.304	1389.718			
EXISTING LEVELS	1394.409	1394.204	1393.838	1393.324	1392.729	1392.115	1391.371	1390.577	1389.793	1389.096	1388.702	1388.452	1388.236	1388.375	1388.569	1389.188	1389.900	1390.703		
DEPTH	-0.012	-0.236	-0.363	-2.757	-2.161	-1.815	-1.071	-0.277	-2.163	-2.203	-1.808	-0.870	-0.749	-0.366	0.669	0.116	-0.182			
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	84.563		

PROFILE OF ALIGNMENT SECTION 8
(VERT SCALE 1:200, HOR SCALE 1:200, VERT EXAG 1:1)
FROM: CH 0.000 TO CH 84.563

File Name: P:\2021\211286_L768-Thedbo\04_CAD\4.2_Drawings\CIV\211286-drg-civ-ew-0216.dwg

Rev	Description	Date	Drawn By
B	DEVELOPMENT APPLICATION	29.06.2022	DA
A	DEVELOPMENT APPLICATION	24.06.2022	DA

Scales
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1:200 @ A1

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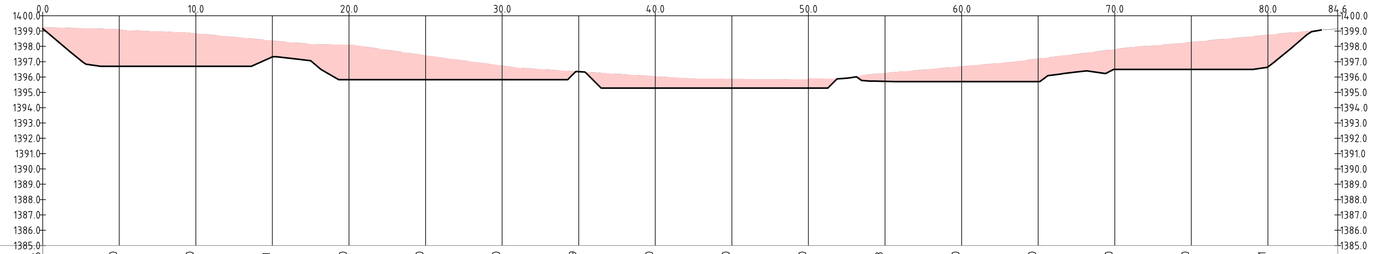
Status: NOT FOR CONSTRUCTION

Original Size	A1	Drawn By: MN	Drafting Check: DA
Date Plotted	29-Jun-22	Designed By: LT	Design Check: JM
Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 24/06/2022
Height Datum	AHD	Approved Signature	

Project Name and Location
MIXED USE DEVELOPMENT
THREDBO NSW

Drawing Title
EARTHWORKS
LONGITUDINAL SECTIONS SHEET 6

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EW	0216	B



DESIGN LEVELS	1399.165	1396.700	1396.700	1397.311	1395.830	1395.830	1395.830	1396.349	1395.280	1395.280	1395.280	1395.718	1395.700	1395.700	1396.500	1396.500	1396.661		
EXISTING LEVELS	1399.239	1399.093	1398.839	1398.371	1398.089	1397.405	1396.734	1396.349	1396.038	1395.863	1395.864	1396.252	1396.687	1397.188	1397.804	1398.275	1398.746	1399.162	
DEPTH	-0.074	-2.393	-2.139	-1.059	-2.259	-1.575	-0.904	0.000	-0.758	-0.583	-0.584	-0.534	-0.987	-1.488	-1.304	-1.775	-2.085		
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	84.563	

PROFILE OF ALIGNMENT SECTION 9
(VERT SCALE 1:200, HOR SCALE 1:200, VERT EXAG 1:1)
FROM: CH 0.000 TO CH 84.563

File Name: P:\2021\211286_I768-Thedbo\04_CAD\4.2_Drawings\CIV\211286-drg-civ-ew-0217.dwg

Rev	Description	Date	Drawn By
B	DEVELOPMENT APPLICATION	29.06.2022	DA
A	DEVELOPMENT APPLICATION	24.06.2022	DA

Scales: 0 5 7.5 10m — 1:200 @ A1

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Original Size	A1	Drawn By: MN	Drafting Check: DA
Date Plotted	29-Jun-22	Designed By: LT	Design Check: JM
Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 24/06/2022
Height Datum	AHD	Approved Signature	

Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: EARTHWORKS LONGITUDINAL SECTIONS SHEET 7

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EW	0217	B

PROJECT NAME:

MIXED USED DEVELOPMENT

PROJECT LOCATION:

LOT 768 THREDBO

JOB NUMBER:

211286

DISCIPLINE

CIVIL ENGINEERING

SUBMISSION TYPE:

DEVELOPMENT APPLICATION

CLIENT:

LE HUNTE PROPERTIES

DRAWING INDEX:

GN-0001	COVER SHEET, DRAWING INDEX AND LOCALITY PLAN
GN-0002	GENERAL NOTES AND LEGEND
AL-0101	GENERAL ARRANGEMENT PLAN
AL-0121	ALIGNMENT CONTROL AND GRADING PLAN
AL-0141	ALIGNMENT ROAD LONGITUDINAL SECTION
EW-0201	CONCEPT EARTHWORKS CUT AND FILL VOLUMES PLAN
EW-0211	EARTHWORKS LONGITUDINAL SECTIONS SHEET 1
EW-0212	EARTHWORKS LONGITUDINAL SECTIONS SHEET 2
EW-0213	EARTHWORKS LONGITUDINAL SECTIONS SHEET 3
EW-0214	EARTHWORKS LONGITUDINAL SECTIONS SHEET 4
EW-0215	EARTHWORKS LONGITUDINAL SECTIONS SHEET 5
EW-0216	EARTHWORKS LONGITUDINAL SECTIONS SHEET 6
EW-0217	EARTHWORKS LONGITUDINAL SECTIONS SHEET 7
PV-0301	PAVEMENT PLAN
DR-0401	STORMWATER AND SUBSOIL DRAINAGE PLAN SHEET 1
DR-0402	STORMWATER AND SUBSOIL DRAINAGE PLAN SHEET 2
DR-0431	STORMWATER DETAILS
EV-0900	LANDSCAPE MANAGEMENT NOTES AND LEGEND
EV-0901	LANDSCAPE MANAGEMENT AND PROTECTION PLAN
EV-0910	SEDIMENT EROSION CONTROL NOTES AND LEGEND
EV-0911	SEDIMENT EROSION CONTROL PLAN
TP-2201	VEHICLE TURNING PATHS PLAN SHEET 1
TP-2202	VEHICLE TURNING PATHS PLAN SHEET 2
TP-2203	VEHICLE TURNING PATHS PLAN SHEET 3
TP-2204	VEHICLE TURNING PATHS PLAN SHEET 4
TP-2205	VEHICLE TURNING PATHS PLAN SHEET 5
TP-2206	VEHICLE TURNING PATHS PLAN SHEET 6
TP-2207	VEHICLE TURNING PATHS PLAN SHEET 7



LOCALITY PLAN

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Rev	Description	Date	Drawn By
B	DEVELOPMENT APPLICATION	24.06.2022	DA
A	DEVELOPMENT APPLICATION	21.03.2022	MN

Status: NOT FOR CONSTRUCTION

Original Size	A1	Drawn By: MN	Drafting Check: DA
Date Plotted	24-Jun-22	Designed By: LT	Design Check: JM
Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 21/03/2022
Height Datum	AHD	Approved Signature	

Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: COVER SHEET, DRAWING INDEX AND LOCALITY PLAN

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	GN	0001	B

File Name: P:\2021\211286_L768-Thredbo\04_CAD\4.2_Drawings\CIV\211286-drg-civ-gn-0001.dwg

UTILITIES LEGEND

EXISTING UTILITIES COMPILED THROUGH THE DIAL BEFORE YOU DIG SERVICE

EXISTING UTILITIES SURVEYED ON SITE

EXISTING UTILITIES TO BE EXHUMED OR ABANDONED

NEW UTILITIES

NEW UTILITIES	
Ø375 SW — Ø375 SW	Ø375 STORMWATER LINE WITH R-SUMP, PLANTATION SUMP, MANHOLE AND HEADWALL
Ø300 SW — Ø300 SW	Ø300 STORMWATER LINE WITH, GRATED SUMP, KISS SUMP AND PIPE END CAP
IR (SS — SS) HER (SS — SS)	SUBSOIL LINE WITH HIGH END RISER INTERMEDIATE RISER AND HEAD WALL
H — SV — Ø150 W — TW — Ø150 W	Ø150 WATER MAIN WITH HYDRANT, STOP VALVE, THRUST WALL AND PIPE END CAP
SC — Ø150 W — TS — Ø150 W; CTB; PTB	Ø150 WATER MAIN WITH WATER METER, TIE AND STOP COCK, CONCRETE THRUST BLOCK, TRENCH STOP AND CONCRETE THRUST PIER
SCOUR STOP — Ø150 S — Ø150 S	Ø150 SEWER MAIN WITH MANHOLE, SCOUR STOP AND PIPE END CAP
G — G — G	GAS MAIN
AAPT — AAPT	AAPT CONDUIT
ICON — ICON	ICON CONDUIT
IINET — IINET	IINET CONDUIT
COMM — COMM	MISCELLANEOUS COMMUNICATIONS CONDUIT
NBN — NBN	NBN CONDUIT
NGEN — NGEN	NEXTGEN CONDUIT
OF — OF — OF	OPTIC FIBRE CONDUIT
OPT — OPT	OPTUS CONDUIT
SSICT — SSICT	SSICT CONDUIT
TEL — TEL	TELSTRA CONDUIT
TR — TR — TR	TRANSACT CONDUIT
VF — VF — VF	VODAFONE CONDUIT
HV — HV	ELECTRICITY ABOVE GROUND - HIGH VOLTAGE
LV — LV	ELECTRICITY ABOVE GROUND - LOW VOLTAGE
HV — HV — HV	ELECTRICITY BELOW GROUND - HIGH VOLTAGE
LV — LV — LV	ELECTRICITY BELOW GROUND - LOW VOLTAGE
LT — LT	STREET LIGHT CONDUIT WITH PEDESTRIAN STREET LIGHT AND SINGLE REACH STREET COLUMN
	UTILITY EASEMENT

UTILITIES MAY BE SHOWN AS FINE BLACK FOR PROPOSED AND GREY FOR EXISTING

GENERAL LEGEND

EXISTING

EXISTING TO BE REMOVED

NEW

BLOCK BOUNDARY

TREE

NOTATION

AL	ALIGNMENT
BK	BARRIER KERB
CH	CHAINAGE
CK	CASTELLATED KERB
CL	COVER LEVEL
CTB	CONCRETE THRUST BLOCK
CT	CONCRETE THRUST PIER
DP	DOWN PIPE
FSL	FINISHED SURFACE LEVEL
FK	FLUSH KERB
H	HYDRANT
HER	HIGH END RISER
HW	HEAD WALL
IL	INVERT LEVEL
IP	INTERSECTION POINT
IR	INTERMEDIATE RISER
K4A	k4A KERB
KR	KERB RETURN
KG	KERB AND GUTTER
KO	KERB ONLY
MH	MANHOLE
MK	MOUNTABLE KERB
MKG	MOUNTABLE KERB AND GUTTER
MS	MOWING STRIP
OCI	OPEN CONCRETE INVERT
PC	PRAM CROSSING
PTB	PIER THRUST BLOCK
PR	PRAM RAMP
RL	REDUCED LEVEL
ROCI	REINFORCED OPEN CONCRETE INVERT
RVC	REINFORCED VEHICLE CROSSING
SC	STOP COCK
SS	SUBSOIL
SV	STOP VALVE
TP	TANGENT POINT
TS	TRENCH STOP
TW	THRUST WALL
VC	VEHICULAR CROSSING

GENERAL NOTES

1. THE CONTRACTOR MUST COMPLY WITH CURRENT WORK AND HEALTH AND SAFETY LEGISLATION, REGULATIONS AND THE CODES OF PRACTICE.
2. THE CONTRACTOR MUST SECURE ALL PERMITS. ARRANGE ALL CLEARANCES AND PAY ALL FEES REQUIRED TO COMPLETE THE PROJECT BEFORE COMMENCING WORK OR PRIOR TO THEM CAUSING DELAY TO THE PROJECT.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION WORKS BEING CARRIED OUT IN ACCORDANCE WITH CONTRACT DOCUMENTS.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING LEVELS WITHIN THE SITE PRIOR TO COMMENCEMENT OF WORKS. ANY DISCREPANCIES SHALL BE REFERRED TO THE DESIGN CONSULTANT A MINIMUM 7 DAYS PRIOR TO COMMENCEMENT OF ASSOCIATED WORKS.
5. THE CONTRACTOR SHALL ENSURE DISTURBED SURFACES OUTSIDE THE GENERAL LIMIT OF WORK IS REINSTATED AT THE CONTRACTORS EXPENSE, TO THE SUPERINTENDENTS SATISFACTION, THESE SURFACES INCLUDE BUT ARE NOT LIMITED TO ROAD PAVEMENTS, KERBS , VERGE PAVING OR GRASSING, PEDESTRIAN FOOTPATHS AND DRIVEWAYS.
6. THE CONTRACTOR IS RESPONSIBLE FOR MAKING SMOOTH CONNECTION TO EXISTING.
7. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL TEMPORARY EARTHWORKS IN A STABLE CONDITION DURING CONSTRUCTION. TEMPORARY SHORING AND BATTERING MUST BE IN ACCORDANCE WITH AS3798
8. THE CONTRACTOR SHALL MAKE PROVISIONS FOR BOTH VEHICULAR AND PEDESTRIAN TRAFFIC AND SITE VISITORS. THE CONTRACTOR MUST ENSURE SAFE ACCESS FOR NON CONSTRUCTION PEOPLE.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION OF ALL NECESSARY TEMPORARY TRAFFIC MANAGEMENT PLANS APPROVED IN ACCORDANCE WITH AS1742.3 AND RELEVANT AUTHORITY REQUIREMENTS.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION OF ALL NECESSARY POLLUTION CONTROL PLANS AND THEIR APPROVAL.
11. THE CONTRACTOR SHALL ENSURE ALL MATERIALS AND WORKMANSHIP IS IN ACCORDANCE WITH RELEVANT CURRENT CODES, STANDARDS, CONTRACT REQUIREMENTS AND AUTHORITY REQUIREMENTS.
12. THE CONTRACTOR SHALL LIAISE WITH ALL ADJACENT CONTRACTS TO ENSURE ALL ALIGNMENTS AND LEVELS OF NEW OR RELOCATED UTILITIES ARE COMPATIBLE.
13. THE INFORMATION PROVIDED IN THESE DRAWINGS PREPARED BY SELLICK CONSULTANTS IS SOLELY FOR THE USE OF THE RECIPIENT. SELLICK CONSULTANTS HAS NO DUTY OF CARE OR ACCEPTS ANY RESPONSIBILITY FOR A THIRD PARTY WHO MAY RELY UPON THESE DOCUMENTS FOR ANY PURPOSE.
14. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH OTHER ENGINEERING/ ARCHITECTURAL DRAWINGS AND SPECIFICATIONS OR OTHER WRITTEN INSTRUCTION THAT MAY BE ISSUED DURING THE TIME OF THE CONTRACT.
15. BLOCK BOUNDARIES SHOWN ON THESE DRAWINGS ARE IN ACCORDANCE WITH SUPPLIED DIGITAL DATA OR SURVEYED.
16. DO NOT SCALE THESE DRAWINGS.
17. ALL DIMENSIONS ARE IN MILLIMETERS OR METERS.
18. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (AHD).
19. ORIGIN OF SURVEYED AND DESIGN COORDINATES - NOTED CO-ORDINATE SYSTEM

UTILITIES NOTES

1. THE UTILITIES INDICATED ON THESE DRAWINGS WERE COMPILED FROM DIGITAL PLANS ISSUED BY UTILITY AUTHORITIES VIA THE DIAL BEFORE YOU DIG SERVICE. THE INFORMATION PROVIDED WAS PREPARED SOLELY FOR THE USE OF THE AUTHORITY AND IS NOT NECESSARILY ACCURATE.
2. BEFORE COMMENCING WORK THE CONTRACTOR SHALL CONTACT THE RELEVANT UTILITY AUTHORITIES AND VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES ON SITE AND OBTAIN NECESSARY CLEARANCES FOR POTHOLING AND CONSTRUCTION. DISCREPANCIES BETWEEN THE CONSTRUCTION DRAWINGS AND THE PHYSICAL ONSITE CONDITIONS MUST BE REPORTED BACK TO THE DESIGN CONSULTANT MINIMUM 7 DAYS PRIOR TO COMMENCEMENT OF WORKS.
3. BEFORE COMMENCING EXCAVATION THE CONTRACTOR SHALL EXPOSE ALL CROSSINGS AND CONNECTIONS POINTS ON EXISTING UNDERGROUND UTILITIES. THE LEVELS OF CONNECTION POINTS AND LEVELS OF EACH CROSSING SHALL BE SURVEYED AND ANY VARIATIONS OF THE LEVELS GIVEN OR ANY DIFFICULTIES IN BEING ABLE TO ACHIEVE THE REQUIRED GRADES OF NEW PIPELINES SHALL BE REPORTED TO THE SUPERINTENDENT.
4. BEFORE COMMENCING WORK THE CONTRACTOR SHALL ARRANGE THE RELOCATION OR ADJUSTMENT OF A UTILITY SERVICE TO THE APPROVAL OF THE RELEVANT UTILITY AUTHORITY.
5. BEFORE COMMENCING WORK THE CONTRACTOR SHALL LOCATE AND MARK ALL UTILITIES WITHIN THE EXTENT OF WORKS.
6. IF AN UNDERGROUND SERVICE IS DAMAGED DURING CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT AND THE RELEVANT UTILITY AUTHORITY IMMEDIATELY. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT NO EXTRA COST TO THE PRINCIPLE.

WATER NOTES

1. ALL WORK ON WATER SUPPLY AND SEWER MAINS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL STANDARDS
2. CONNECTIONS AND OR DISCONNECTIONS OF SEWER AND WATER AT THE MAIN TO BE MADE BY COUNCIL REQUIREMENTS AT CONTRACTOR'S EXPENSE. THE CONTRACTOR IS TO EXPOSE THE MAIN AT THE LOCATION OF THE CONNECTION/DISCONNECTION IN PREPARATION FOR THE WORKS BY QPRC COUNCIL. ALL EXCAVATION IN THE VICINITY OF MAINS IS TO BE CARRIED OUT BY HAND.
3. THE CONTRACTOR MUST VISIT THE SITE OF WORKS BEFORE TENDERING AND MAKE ALLOWANCES IN HIS TENDER FOR ALL TOPOGRAPHIC CONSTRAINTS AFFECTING THE EXECUTION OF THE WORKS AND THE RESTORATION OF THE SITE.
4. ALTHOUGH THE POSITIONS OF EXISTING UNDERGROUND SERVICES HAVE BEEN PLOTTED FROM AVAILABLE RECORDS, THE CONTRACTOR SHALL CONFIRM THE DEPTH AND LOCATION OF ALL SERVICES ON SITE BEFORE COMMENCING EXCAVATIONS. CONTRACTOR TO ADVISE DESIGN ENGINEER IF NOT IN ACCORDANCE WITH THE PLAN.
5. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (AHD). ALL COORDINATES ARE BASED ON NOTED CO-ORDINATE SYSTEM.
6. THE CONTRACTOR MUST SECURE ALL PERMITS, ARRANGE ALL CLEARANCES AND PAY ALL FEES REQUIRED TO COMPLETE THE PROJECT BEFORE COMMENCING WORK.
7. WORK AS EXECUTED DRAWINGS, TIE BOOK AND DEPOSITED PLAN MUST BE SUBMITTED BEFORE CONNECTION.
8. ANY NON-METALLIC WATER SERVICE IS TO BE INSTALLED WITH TRACER WIRE AND TESTED.
9. EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROVED SPOIL AREA.
10. THE CONTRACTOR SHALL REINSTATE ALL DISTURBED SURFACES TO MATCH EXISTING.
11. THE CONTRACTOR IS RESPONSIBLE FOR THE PREPARATION OF ALL NECESSARY TEMPORARY TRAFFIC MANAGEMENT PLANS AND THEIR APPROVAL.
12. CONTRACTOR TO CONFIRM DEPTH OF SEWER AND STORMWATER TIE POINTS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ADVISE DESIGN ENGINEER IF NOT IN ACCORDANCE WITH PLAN.
13. ANY DEVIATION OF PIPE MATERIAL TO BE PROPOSED TO ENGINEER PRIOR TO INSTALLATION.

SEWER EXPLANATIONS

PIPE INFORMATION BOX

601.005	UPSTREAM INVERT LEVEL
Ø150	PIPE INTERNAL DIAMETER
uPVC	PIPE MATERIAL RCP,VC OR PVC
13.5m	PIPE LENGTH
7.62%	PIPE GRADE
600.022	DOWNSTREAM INVERT LEVEL

SEWER STRUCTURE ID

S2-1 SEWER LINE S2, SEWER STRUCTURE '1'

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Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: GENERAL NOTES AND LEGEND

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	GN	0002	B

REFERENCES:

1. FOR COVER SHEET, DRAWING INDEX AND LOCALITY PLAN REFER DRAWING GN-0001
2. FOR GENERAL NOTES AND LEGEND REFER DRAWING GN-0002



LEGEND

100 THICK REINFORCED CONCRETE PAVEMENT

FOR ALL OTHER PAVEMENT TYPES AND FINISHES REFER ARCHITECTS DOCUMENTATION

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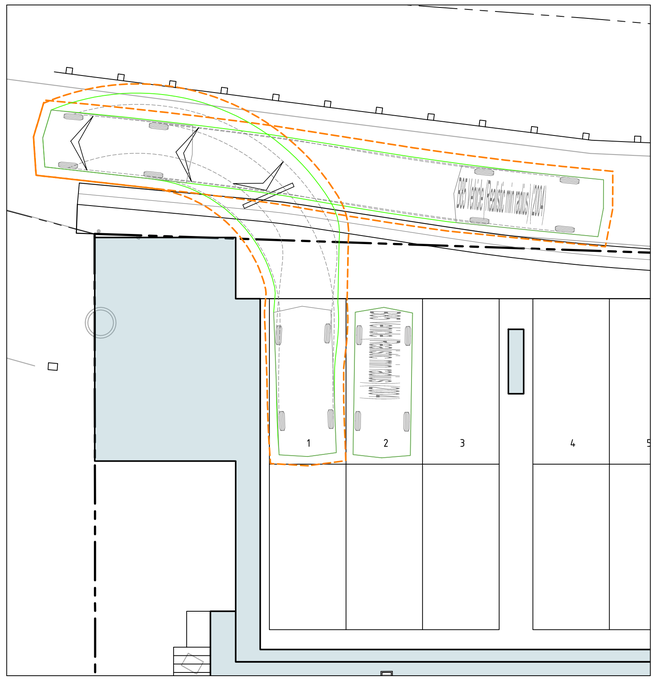
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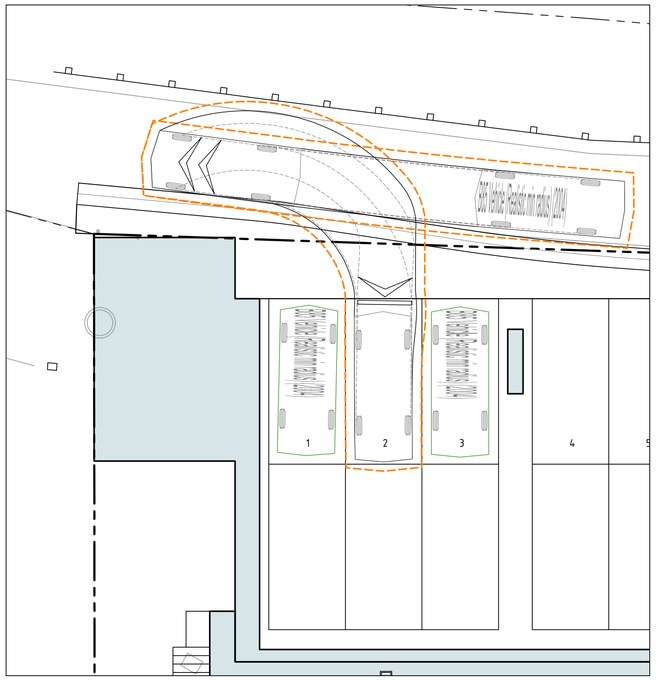
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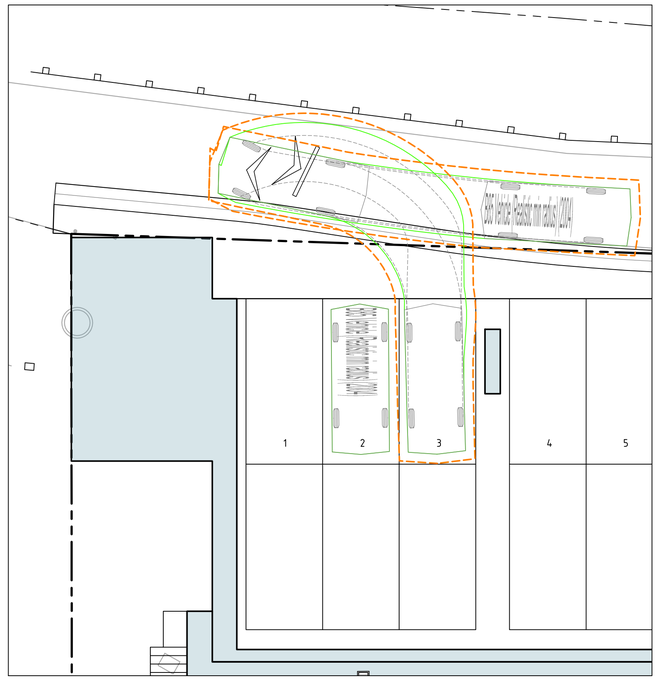
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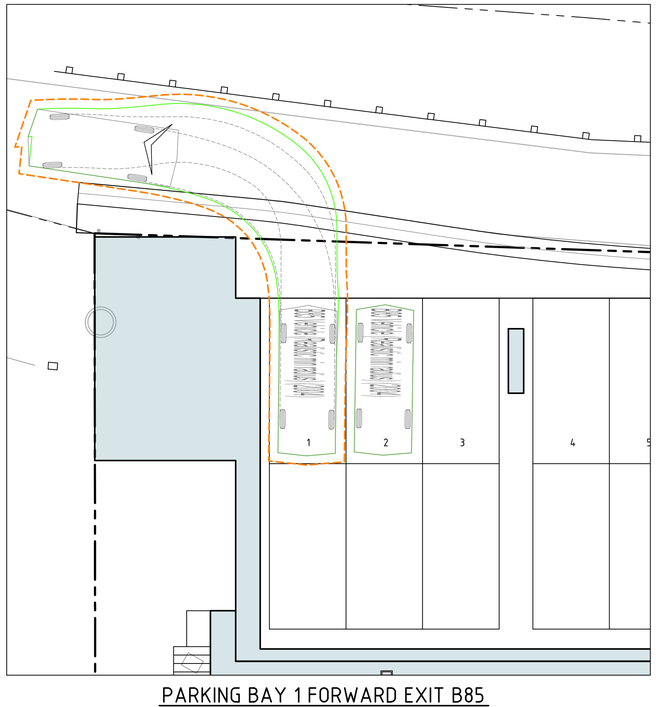
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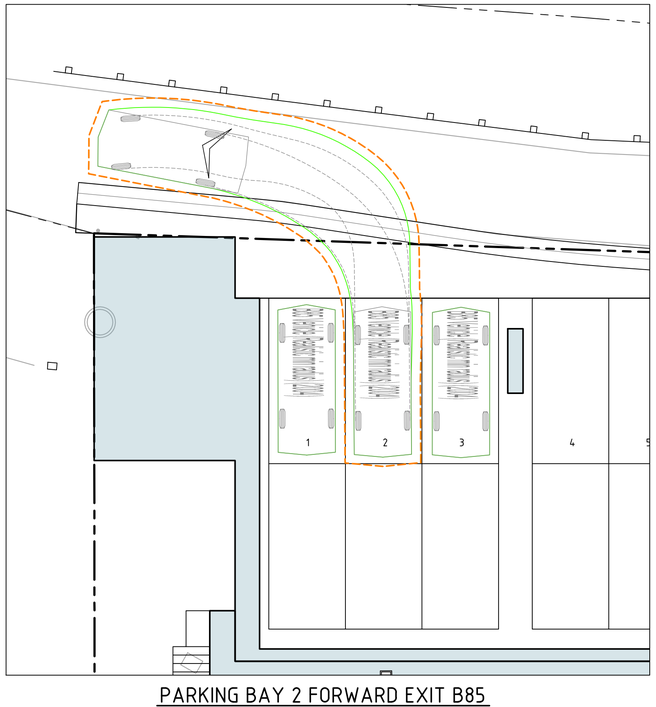
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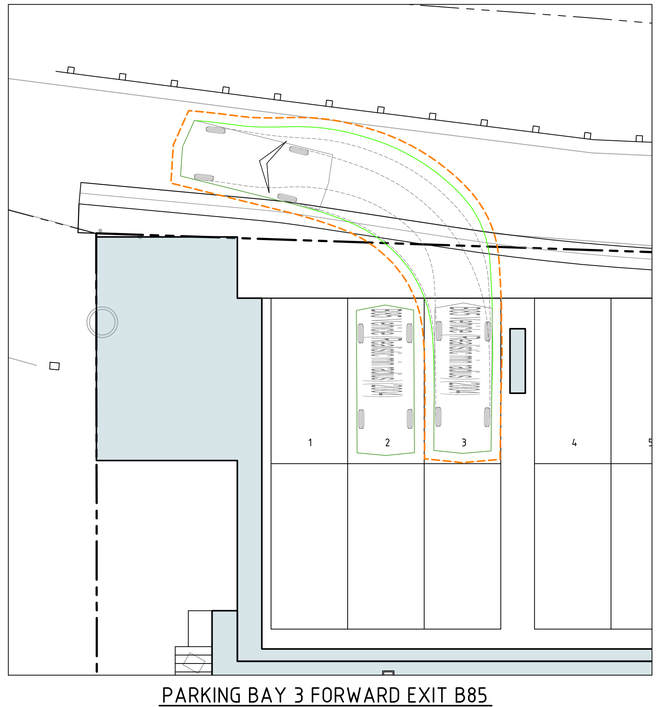
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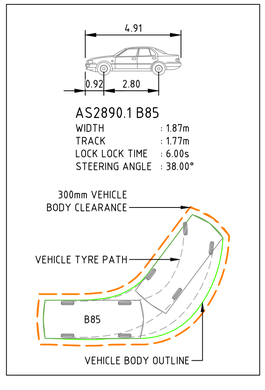
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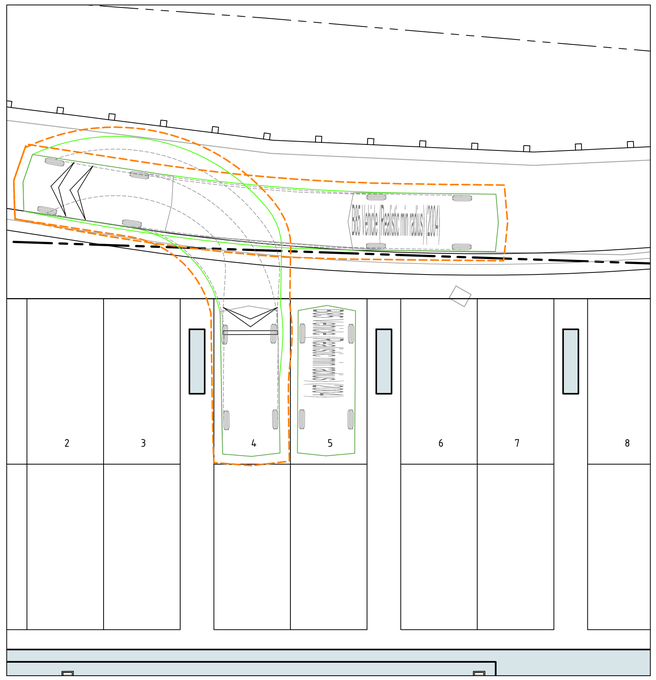
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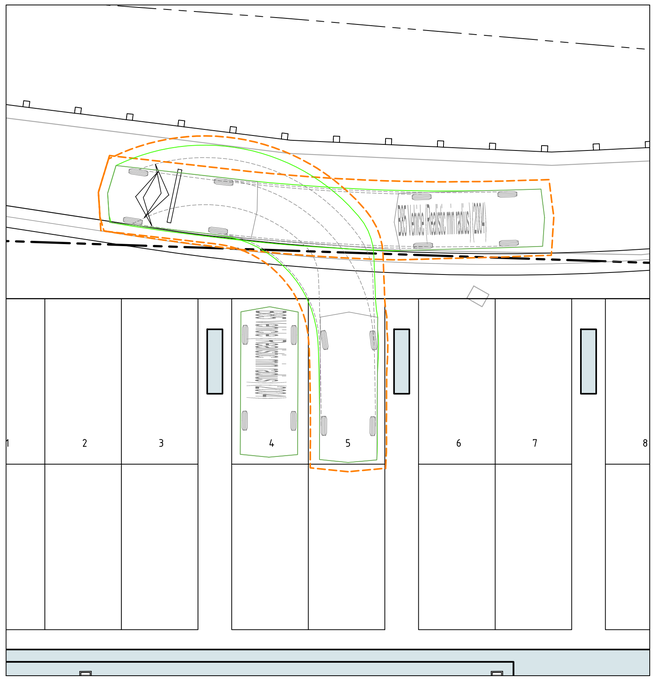
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Drawing Title
VEHICLE TURNING PATHS PLAN
SHEET 1

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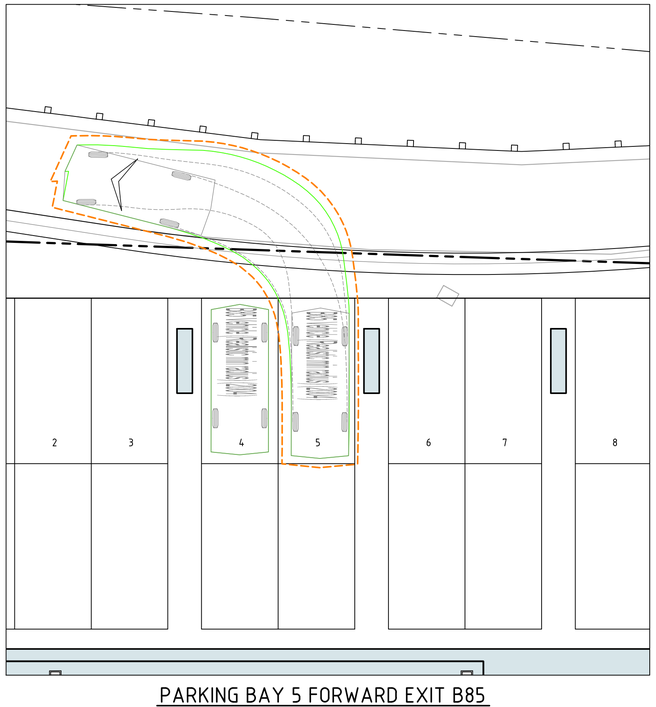
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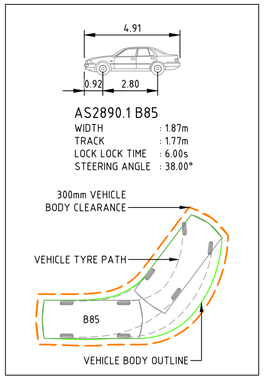
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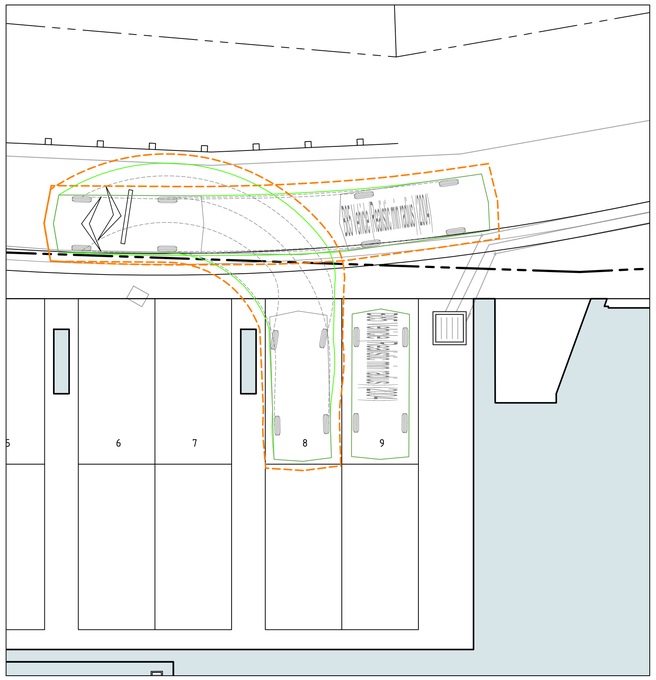
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Drawing Title
VEHICLE TURNING PATHS PLAN
SHEET 2

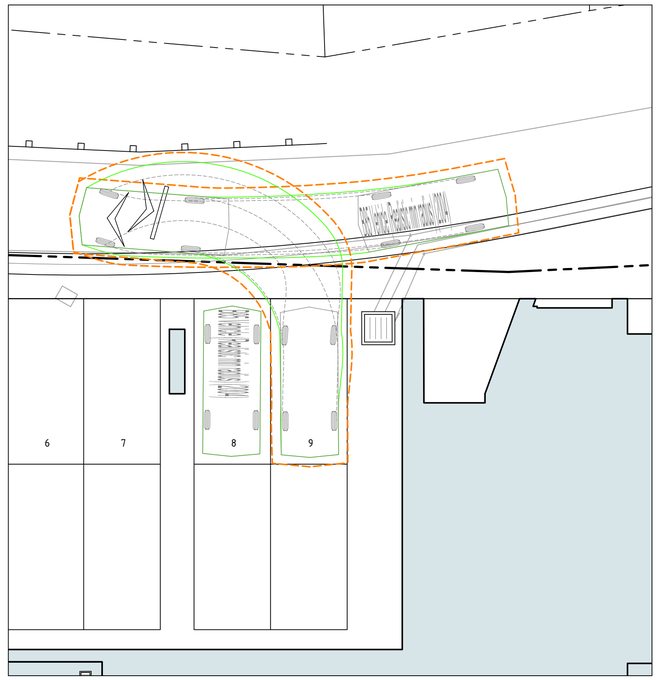
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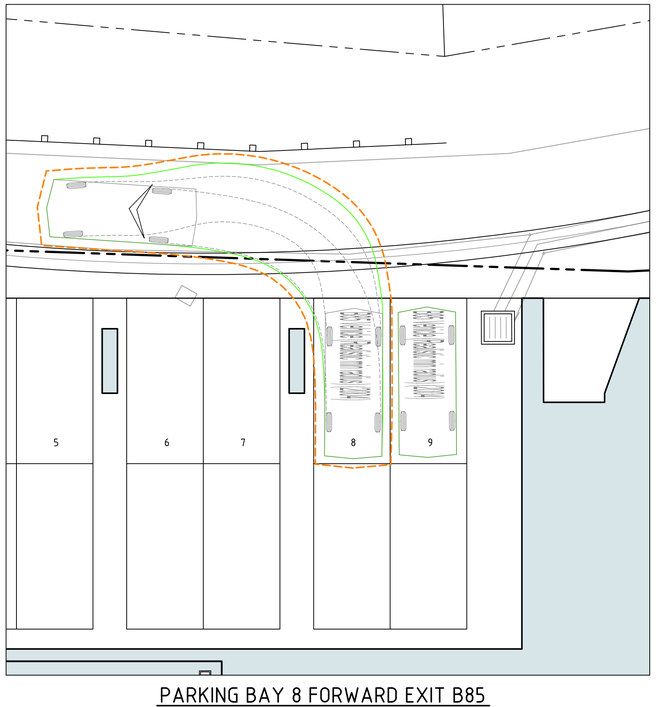
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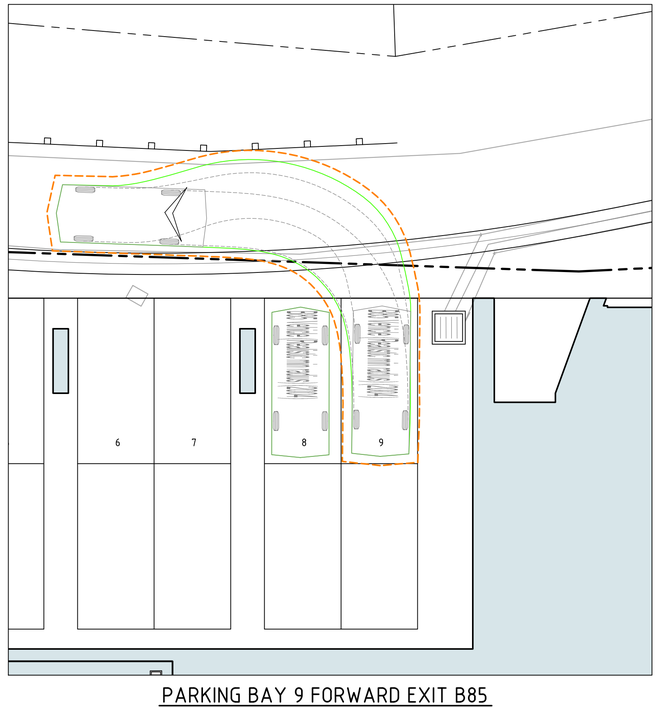
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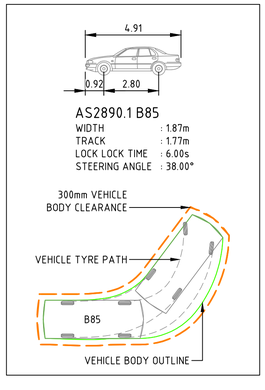
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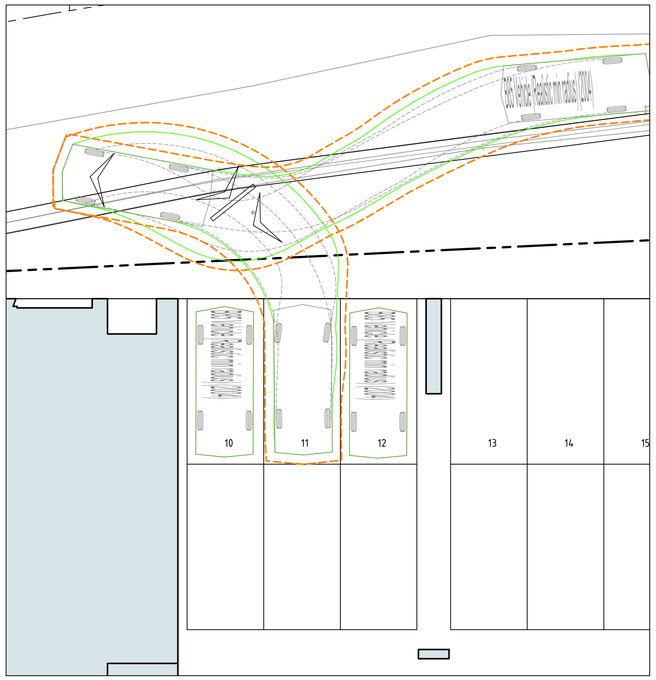
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Drawing Title
VEHICLE TURNING PATHS PLAN
SHEET 3

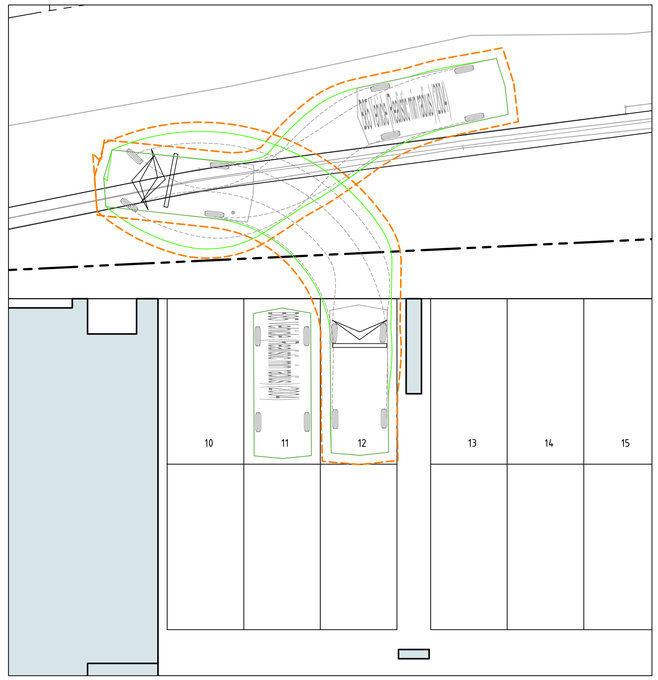
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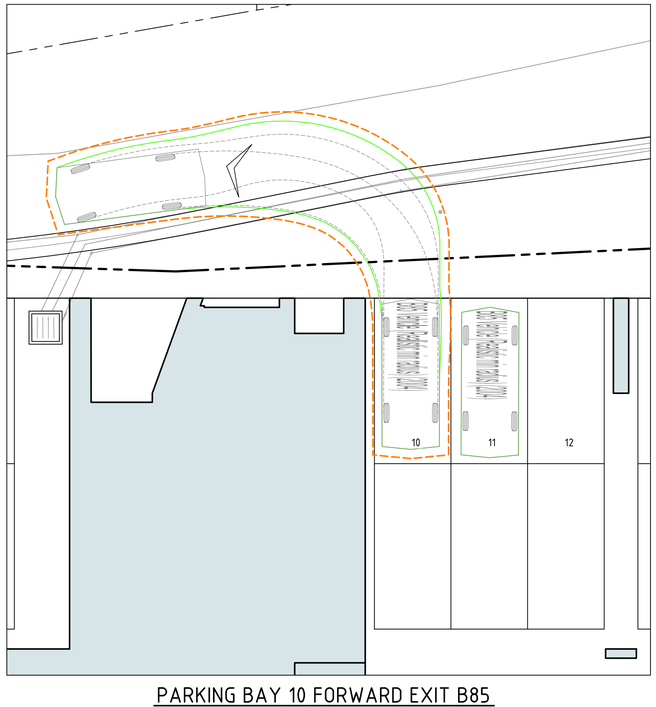
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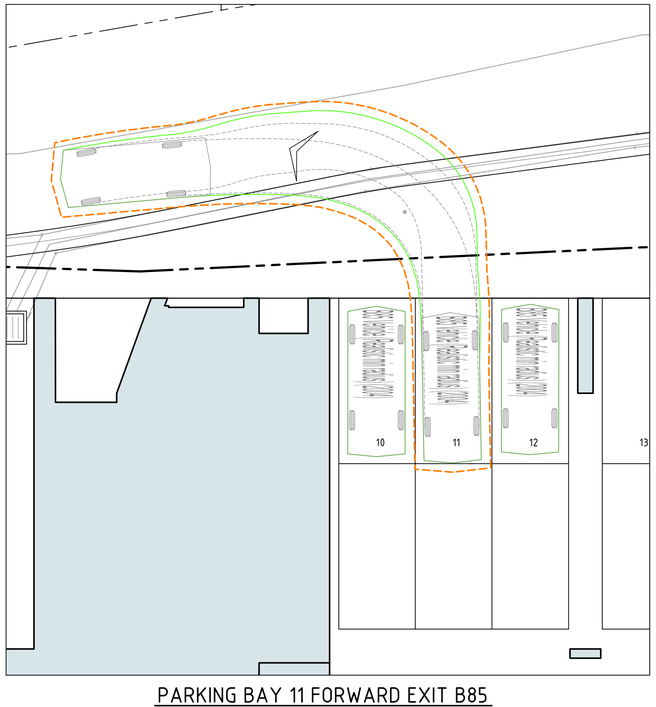
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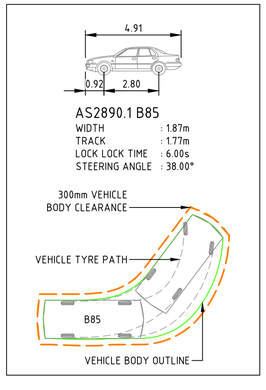
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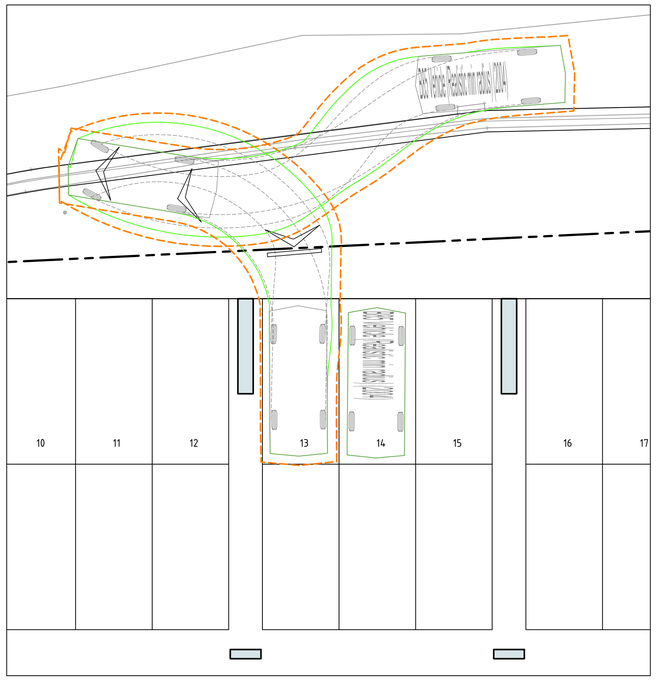
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Project Name and Location
MIXED USE DEVELOPMENT
THREDBO NSW

Drawing Title
VEHICLE TURNING PATHS PLAN
SHEET 4

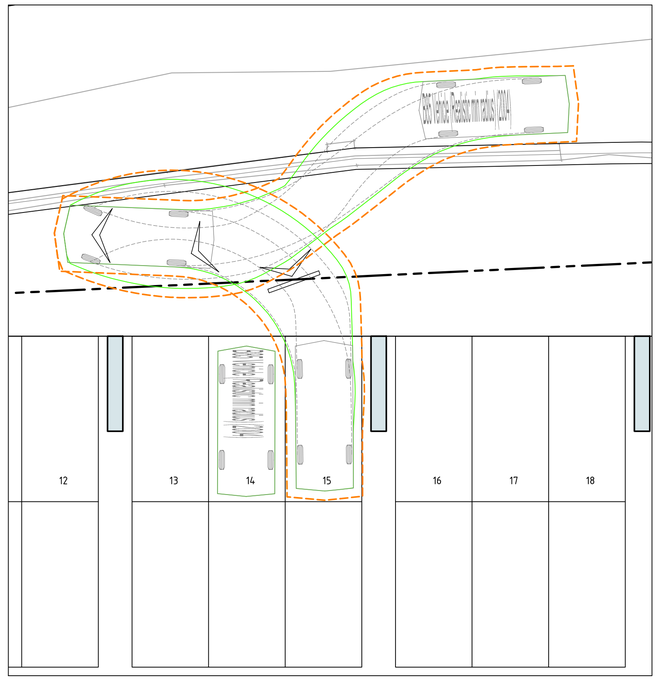
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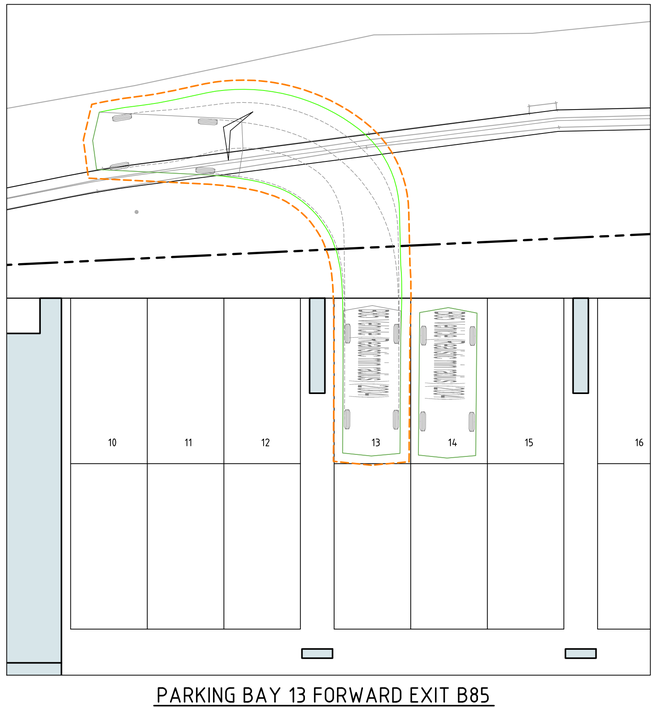
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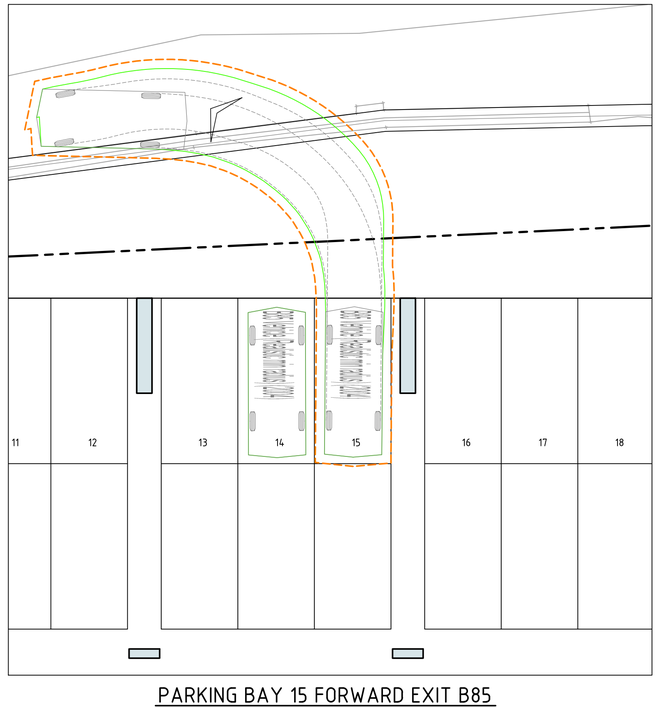
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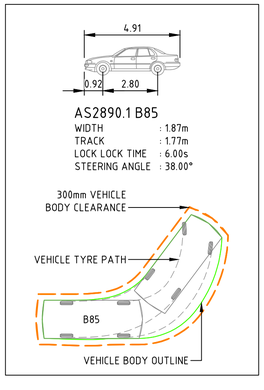
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Project Name and Location
MIXED USE DEVELOPMENT
THREDBO NSW

Drawing Title
VEHICLE TURNING PATHS PLAN
SHEET 5

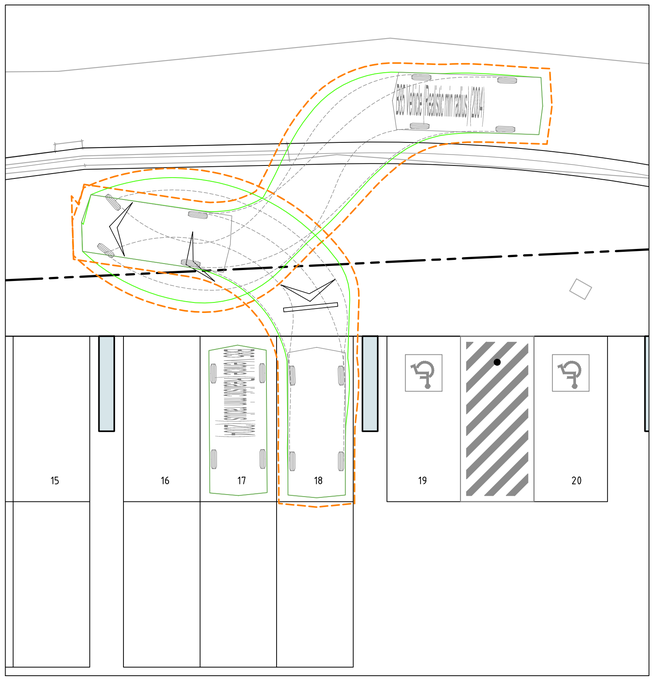
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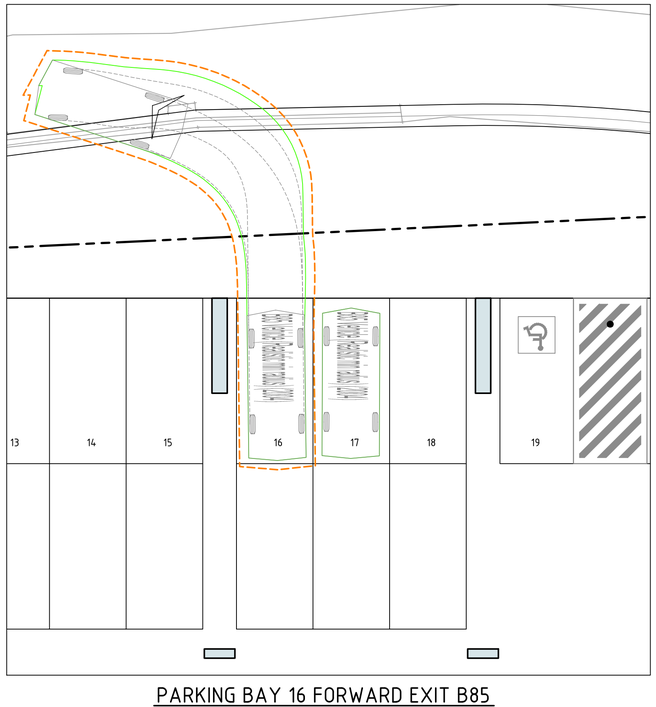
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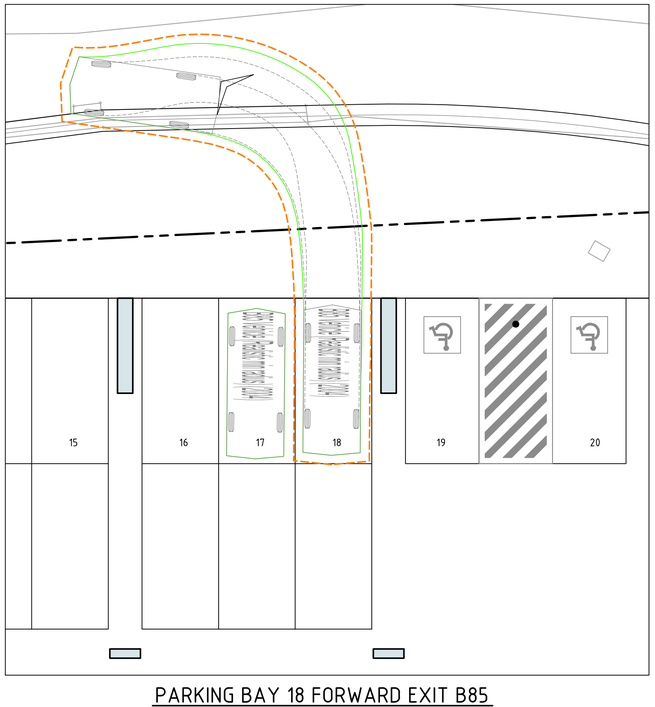
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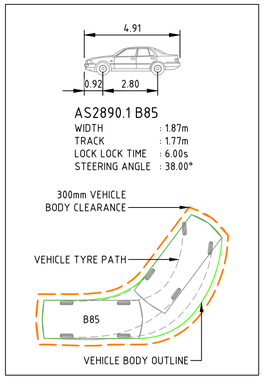
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A	DEVELOPMENT APPLICATION	24.06.2022	DA

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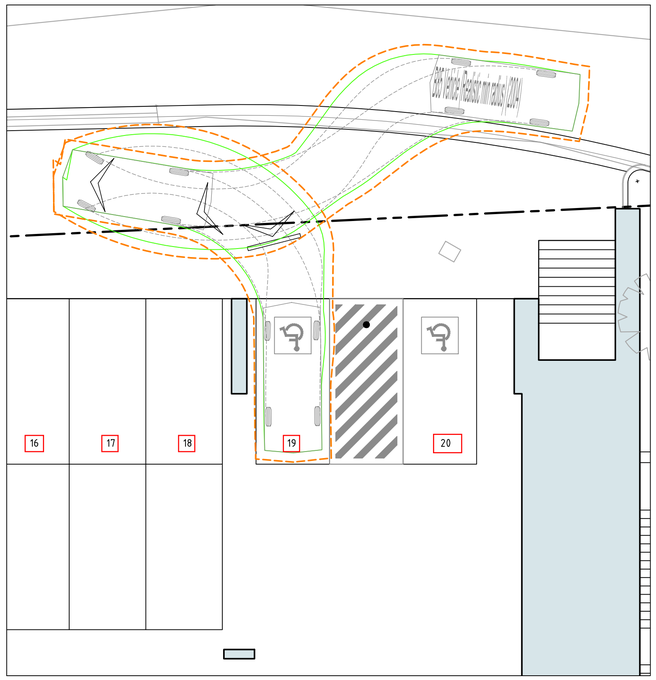
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Original Size	A1	Drawn By MN	Drafting Check DA
Date Plotted	24-Jun-22	Designed By LT	Design Check JM
Coordinate System	STROMLO GRID	Approved BC	Approved Date 24/06/2022
Height Datum	AHD	Approved Signature	

Project Name and Location
MIXED USE DEVELOPMENT
THREDBO NSW

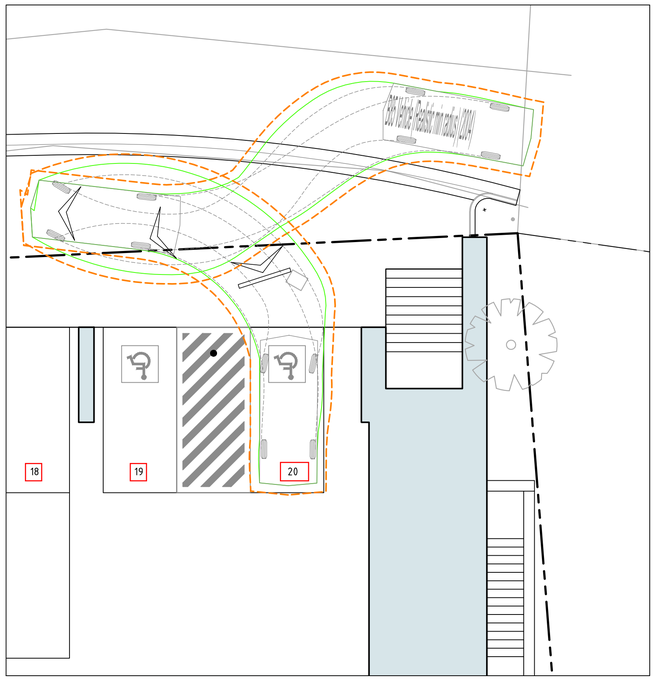
Drawing Title
VEHICLE TURNING PATHS PLAN
SHEET 6

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	TP	2206	A



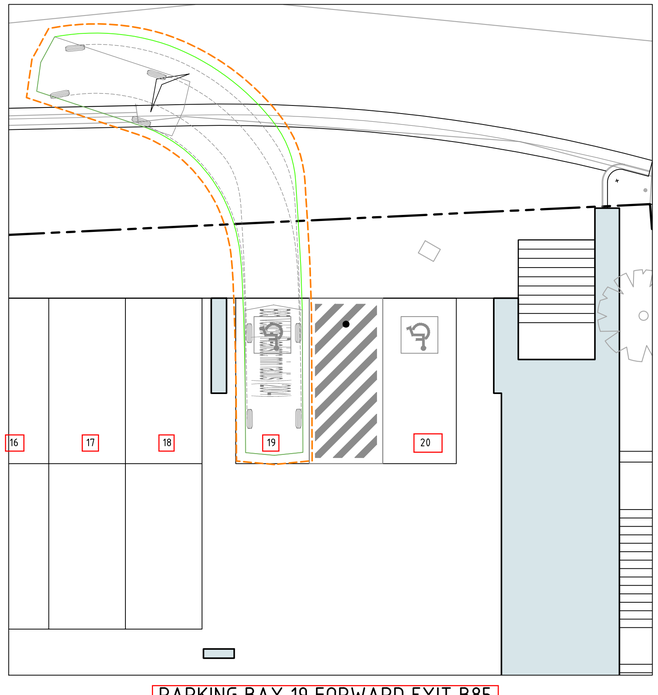
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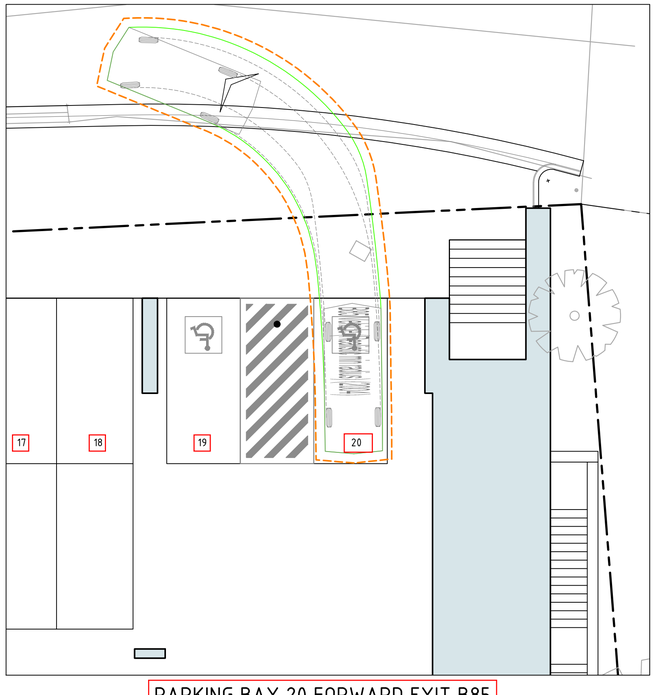
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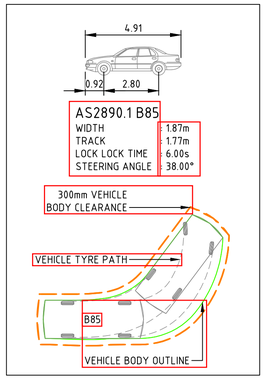
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PARKING BAY 20 FORWARD EXIT B85

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Status: NOT FOR CONSTRUCTION

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Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 24/06/2022
Height Datum	AHD	Approved Signature	

Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: VEHICLE TURNING PATHS PLAN

SHEET 7

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	TP	2207	A

Site Environmental Management Report

Thredbo Lot 768

JULY 2022

Site Environmental Management Plan

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PROJECT DESCRIPTION

Proposed construction and use of a tourist accommodation development including the following;

- Vegetation removal
- Construction of a new multi-storey building in the northern portion of the site comprising;
    - 16 accommodation units;
    - Visitor recreation and food and beverage facilities including a restaurant and bar;
    - Street level car parking and bicycle spaces; and
    - Staff room.
- Construction of 5 x 3 storey detached accommodation units in the southern portion of the site; and
- Associated drainage, services and landscape works.

EROSION AND SEDIMENT CONTROL MANAGEMENT PLAN (ESCMP)

Erosion and Sediment Control will be managed in accordance with the Erosion and Sediment Control Management Plan as shown in *ATTACHMENT A – Erosion and Sediment Control Management Plan* as provided by Sellicks Consultants (Civil Consultant).

Examples of appropriate Sediment Filters (retention traps) will be used throughout the course of construction as a temporary measure to mitigate sediment pollution. Natural materials such as straw bales, woven geotextile, earth, rock and suitable crushed concrete products will be used. Refer *ATTACHMENT A – Managing Urban Stormwater: Soils & Construction – Volume 1 (Extract)* for appropriate examples/details that will be used throughout construction.

Environmental controls will be managed/monitored weekly (or on an as needed basis) and in particular after significant rainfall/storm events.

SITE COMPOUND & CONSTRUCTION FENCING

A perimeter fence around Lot 768's entirety will be erected (or in part as stages progress) to clearly define the construction zone. All fencing and associated compounds will be established in consultation with Kosciuszko Thredbo (KT). The site compound and fencing has been provided in *ATTACHMENT B – Site Establishment Plan.*

The plan although indicative, details the location of various key construction requirements and activities such as the Site Amenities (Office/Lunchroom etc), Mobile Plant Zone, Worker Entry/Exit points and typical vehicle movements.

Worker parking will be facilitated onsite if permissible and/or within the Friday Flat Carpark in consultation with KT. All loading and unloading of material/plant will be within the loading zone behind construction fencing.

TRAFFIC & PEDESTRIAN MANAGEMENT

Partial road closures to undertake the more 'significant' construction tasks (i.e. crane lifts, concrete pumping etc) has already been discussed with KT when required and upon approval will be actioned. An example of this partial road closure can be seen in *ATTACHMENT B – Site Establishment Plan.*

Pedestrian Management will be managed by various methods from secluding areas from public area and work zones (physically barriers & signage) and the use of licences traffic control personnel.

MANAGEMENT OF NATIVE VEGETATION

Construction fencing will be set-up on the boundary of Lot 768 as already noted. Construction activity will be limited to within the construction fenced zone and land clearing and tree removal will be limited to that described in *ATTACHMENT C – Heritage/Ecology BDAR Extract*.

MANAGEMENT OF HERITAGE & BIODIVERSITY (BDAR)

As per the Aboriginal Heritage Due Diligence Assessment Report (July 2022) prepared by NHG Consulting, any items suspected of being Aboriginal in origin discovered during the work, all immediate works within the vicinity must stop and the NSW Environmental Line (1300 361 967) notified.

The find will need to be assessed and, if found to be an Aboriginal object, an Aboriginal Heritage Impact Permit (AHIP) may be required. The July 2022 Report has noted that from the initial desktop assessment and from site investigations to date that it will be unlikely to contain any artefacts however this will be managed by the Head Contractor during construction.

Mitigating and managing Biodiversity impacts will also be a key factor for the project which will need careful attention throughout the course of construction. The Biodiversity Development Assessment Report (BDAR) – July 2022, prepared by NGH Consulting details Mitigation Measures within Section 8.1 which will be monitored and maintained throughout the project. Refer *ATTACHMENT C – HERITAGE/ECOLOGY BDAR EXTRACT,* Section 8.1 – Mitigating and Managing Impacts. This Table summaries the key measures required to mitigate the impacts with appropriate techniques, timing, frequency and responsibility of such tasks. This will be managed by the Head Contractor prior and during the construction works.

WASTE MANAGEMENT

Construction waste storage is to be located in accordance with the Site Establishment Plan (as per *ATTACHMENT B – Site Establishment Plan*.

All construction waste management is to be removed from Thredbo Lot 768 to the Snowy River Shires landfill tip at Jindabyne where recycling of construction materials occurs including clean steel and roof sheeting, large lumps of concrete and/or rock, engine oil and batteries stockpiled separately for recycling.

All builders waste and rubbish are to be contained within site skips to prevent litter being blown around the site. Whilst being transported in the village or to Jindabyne all rubbish shall be contained in a manner which will prevent spillage onto roadways or any other public place. Bins will be provided throughout the course of construction for both builders waste and general worker waste. The worksite will be left in a tidy and rubbish free state upon completion of the project.

General rubbish generated post completion and during the ‘operational phase’ will be undertaken in accordance with the Thredbo Environmental Services Plan as prepared and managed by Kosciuszko Thredbo (KT).

NOISE, VIBRATION & AIR POLLUTION

Noise, Vibration & Air pollution will be managed and minimised in accordance with-

- *ATTACHMENT D - Construction Control Project Management Plan*
- *ATTACHMENT E - Construction Control Project Risk Register*
- *ATTACHMENT F - Construction Control Project Emergency Plan*.

EXTERNAL LIGHTING POLLUTION

External lighting will be kept to a minimum post construction activity with works undertaken during the daylight hours. Emergency lighting and lighting to access routes will be provided to ensure safe access/egress. Fitting selected will be managed by:

- Use of partial shields/light diffusers
- Use of full cut-off lighting fittings near natural landscaped areas to reduce impact on wildlife
- Reducing the intensity of and/or turning off lights if not needed.
- Installation of efficient lighting control systems that can be adjusted to suit appropriate illumination levels for the area.

- Adjustment of light fittings to face downwards rather than upwards or towards existing residential dwellings and away from the local road network.

FUELS AND CHEMICALS

The storage of fuels and chemicals will be minimised and likely limited to-

- Diesel,
- Paint,
- Unleaded petrol,
- General construction adhesive materials,
- Cleaning products.

Those stored on site will be managed in accordance with:

- *ATTACHMENT D - Construction Control Project Management Plan*
- *ATTACHMENT E - Construction Control Project Risk Register*
- *ATTACHMENT F - Construction Control Project Emergency Plan.*

EMERGENCY PROCEDURES

Emergency Procedures will be managed in accordance with-

- *ATTACHMENT D - Construction Control Project Management Plan*
- *ATTACHMENT E - Construction Control Project Risk Register*
- *ATTACHMENT F - Construction Control Project Emergency Plan*.

Key Emergency Response Contacts as follows:

Organisation	**Emergency Phone**	**Non-Emergency Phone**
NSW Police	000 (Triple zero)	Jindabyne (02) 6456 2244
NSW Fire Brigade	000 (Triple zero)	Jindabyne (02) 6456 2476
NSW Rural Fire Services	000 (Triple zero)	1800 679 737
NSW Ambulance	000 (Triple zero)	Nil
Medical Centres	Jindabyne (02) 6457 1221	
National Parks & Wildlife Services (NPWS)	1800 629 104	Jindabyne (02) 6450 5555
Roads and Traffic Authority	Traffic incidents & road conditions: 131 700 Road Closures and special events: 132 701	
Environment Protection Authority Environment Line	131 555	

CONSTRUCTION TECHNIQUES

To minimise the construction program and disturbance to the area it is proposed that residential terrace and lodge components of the development (components above L2) are constructed off-site as modular units and transported to site when ready and craned into position.

Excavation, shoring, in-ground services, footings, and the slab on ground along diggings terrace will be constructed as the first process. Temporary stockpiling during excavation will occur within the site boundaries (as shown on the Sediment and Erosion Control Management Plan) prior to being loaded onto semi rigid trucks entering and exiting the nominated construction entrance and tipping spoil offsite at a location yet to be confirmed. Following the placement of the slab on ground, this slab will be utilised for the significant cranage event (mobile crane) for placing the lodge modules at the rear of the block.

With the completion of cranage requirements for the lodges, the superstructure of the restaurant/wellness area, including ground, mezzanine, Level 1 and Level 2 (slab only) will commence and be built in a conventional manner (cast in-situ). Site Establishment and the proposed traffic control measures for the superstructure stage is shown in Attachment B – Site Establishment Plan.

It is proposed one lane of Diggings Terrace remains open (with approved TTM measures to allow the flow of both directions of traffic). It is proposed the other lane be fenced and utilised for machinery and material loading requirements. Machinery will include mobile cranes, concrete pumps, concrete agitators, and trucks.

When the superstructure stage is complete site establishment will be relocated to within the building and fencing removed off the road to allow the return of normal traffic movement.

In the event of inclement weather, it is proposed the construction site will be secured and closed.

An indicative construction timeline (showing winter closure periods) is attached in *ATTACHMENT G – Indicative Construction Program*.

ATTACHMENT A – EROSION AND SEDIMENT CONTROL MANAGAMENT PLAN

POLLUTION CONTROL NOTES

DEVELOPMENT CONTACT DETAILS

PROJECT MANAGER: TBC

SITE MANAGER: TBC

TOTAL SITE AREA: 4960.62 m²

SEDIMENT CONTROL NOTES

1. SEDIMENT AND EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH SOIL AND CONSTRUCTION MANUAL, VERSION 1, 1ST EDITION, MARCH 2004 AND FULLY OPERATIONAL PRIOR TO STRIPPING OF SITE TOP SOIL.
2. STOCK PILE/S TO BE LOCATED AWAY FROM DRAINAGE LINES AND SURFACE FLOW PATHS. CONTOURED STRIATIONS OR FURROWS TO BE PROVIDED TO STOCK PILES TO MINIMISE EROSION.
3. STABILISED CONSTRUCTION ENTRANCE TO BE CONSTRUCTED PRIOR TO ACCESS TO SITE BY CONSTRUCTION VEHICLES. AGGREGATE TO BE TURNED WHEN SEDIMENT BUILDS UP AND RENEWED WHEN REQUIRED.
4. WHERE UNDERGROUND STORMWATER DRAINAGE IS INSTALLED TO INTERNAL ROADWORKS, PROVIDE INLET FILTER.
5. ENVIRONMENT PROTECTION AGREEMENT TO BE TAKEN OUT BY CONTRACTOR WITH ENVIRONMENT PROTECTION AUTHORITY. (TELEPHONE 132 281)
6. ALL NEW CONSTRUCTION WORK MUST BE CONTAINED WITHIN THE SITE EXCEPT FOR APPROVED SERVICE CONNECTIONS AND ROADWORKS.
7. LIMIT ACCESS TO SITE DURING AND IMMEDIATELY AFTER WET WEATHER.
8. REGULARLY REMOVE ANY SOIL FROM ROADS ADJACENT TO THE SITE.
9. NO STORAGE OF CONSTRUCTION MATERIALS, PARKING OF VEHICLES NOR EQUIPMENT PERMITTED OUTSIDE OF BLOCK WITHOUT TCCS APPROVAL.
10. NO SITE SHEDS, STORAGE SHEDS OR SITE AMENITIES TO BE ERECTED OUTSIDE OF BLOCK WITHOUT TCCS APPROVAL.
11. PROVIDE KERBSIDE FILTER ROLL TO EXISTING SUMPS WHERE INDICATED.
12. KERBSIDE FILTER ROLLS TO BE REMOVED, CLEANED AND REINSTATED ON A WEEKLY BASIS AT A MINIMUM. TRAPPED SEDIMENT ABOUT SUMPS ALSO TO BE REMOVED. CLEANING IS ALSO TO TAKE PLACE IMMEDIATELY AFTER PERIODS OF RAINFALL DURING CONSTRUCTION.
13. ALL SERVICE TRENCHES TO BE BACK FILLED WITHIN 24 HOURS OF INSPECTION.
14. EXCESS SOIL IS TO BE DISPOSED AT AN ENVIRONMENT PROTECTION AUTHORITY APPROVED LOCATION.
15. THE SITE FOREMAN IS TO CONTACT THE ENVIRONMENT PROTECTION AUTHORITY (132281) TO ARRANGE A SITE INSPECTION AND ENDORSEMENT OF SEDIMENT AND EROSION CONTROL MEASURES PRIOR TO WORKS COMMENCING.
16. THE SITE FOREMAN IS TO CONTACT THE ENVIRONMENT PROTECTION AUTHORITY (132281) TO DISCUSS ANY PROPOSED MAJOR CHANGES TO SEDIMENT AND EROSION CONTROLS ON SITE PRIOR TO IMPLEMENTING THE CHANGES.
17. THE SITE FOREMAN IS TO ENSURE CONTRACTOR'S ACCESS AND EXIT THE SITE USING ONLY ENVIRONMENT PROTECTION AUTHORITY APPROVED STABILISED ACCESS/EXIT POINTS AS DETAILED ON ENDORSED SEDIMENT AND EROSION CONTROL PLANS.
18. FOR SITES 1 HECTARE OR GREATER, A TEMPORARY SEDIMENT POND SHALL BE CONSTRUCTED. THE SEDIMENT POND SHALL BE SIZED TO HOLD 150m³ PER HECTARE IN ACCORDANCE WITH LANDCOM'S MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION (THE BLUE BOOK). DISCHARGE FROM THE POND IS PERMISSIBLE WHEN THE WATER pH IS 6.5-8.5 AND IS CLARIFIED TO OR AT BELOW 60mg/L (50NTU). IF SEDIMENT LEVEL IS GREATER, THEN PRIOR TO DISCHARGE, THE DAM MUST BE DOSED WITH EITHER ALUM OR GYPSUM AND ALLOWED TO SETTLE UNTIL THE SEDIMENT IS LESS THAN 60mg/L (50NTU).
19. WATER LEVEL TO BE MAINTAINED AT LESS THAN 20% OF CAPACITY TO ALLOW RUNOFF STORAGE DURING A RAIN EVENT.
20. REGULAR DREDGING OF THE DAM MUST BE CARRIED OUT TO REMOVE SILT.
21. SITE DRAWING AND DETAILS MUST BE PROVIDED TO ENVIRONMENT PROTECTION AUTHORITY, FOR APPROVAL PRIOR TO WORKS COMMENCING.

WASTE NOTES

1. WASTE ENCLOSURE(S) ARE TO BE USED FOR ALL RUBBISH ON SITE AND RUBBISH REMOVED FROM ENCLOSURE(S) WHEN REQUIRED OR FULL.

DISPOSAL OF SPOIL

PRIOR TO ANY WORKS COMMENCING INVOLVING EXPORT OF SPOIL GREATER THAN 100m³, THE FOLLOWING INFORMATION MUST BE PROVIDED TO THE COUNCIL:

1. WHERE THE SPOIL WILL ORIGINATE FROM: WHO IS DISPOSING OF THE SPOIL: WHERE THE SPOIL WILL BE TAKEN: THE AMOUNT OF SPOIL TO BE TAKEN AWAY;
2. MOVEMENT DATES AND CONTACT DETAILS: DESCRIPTION OF THE TYPE OF SPOIL TAKEN AWAY:DETAILS OF HOW RECORDS WILL BE KEPT; AND
3. TIME FRAME TO COMPLETE THE WORKS TO THE SATISFACTION OF THE ENVIRONMENT PROTECTION AUTHORITY.
4. SPOIL MAY BE TAKEN TO AN APPROVED LANDFILL SITE WITHOUT APPROVAL IF THE SPOIL IS TO BE TAKEN TO AN AREA OTHER THAN AN APPROVED LANDFILL SITE, ENSURE THE ACCEPTOR OF THE SPOIL IS AWARE OF THE REQUIREMENTS OF LOCAL APPROVING BODY.

NOISE

ENSURE ALL BUILDING WORK THAT GENERATES NOISE IS CONDUCTED WITHIN THE TIME PERIODS DETAILED IN SCHEDULE 2 OF THE ENVIRONMENT PROTECTION REGULATIONS 2005.

BUILDING WORK DETAILS	MONDAY TO SATURDAY	SUNDAY AND PUBLIC HOLIDAYS
INDUSTRIAL, CITY AND TOWN CENTRE AREAS	6AM TO 8PM	6AM TO 8PM
ANY OTHER AREA WHEN WORK COMPLETED WITHIN 2 WEEKS	7AM TO 6PM	8AM TO 8PM
ANY OTHER AREA WHEN WORK NOT COMPLETED WITHIN 2 WEEKS	7AM TO 6PM	CONSTRUCTION WORK MUST NOT EXCEED NOISE STANDARD

IN ADDITION:

1. SCHEDULE NOISY ACTIVITIES FOR THE LEAST SENSITIVE TIMES OF THE DAY SUCH AS MID-MORNING AND MID-AFTERNOON.
2. SELECT MACHINERY THAT PRODUCE LESS NOISE; AND
3. ENSURE MACHINERY IS WELL MAINTAINED.

DUST MANAGEMENT

WHERE BUILDING WORK GENERATES DUST, ALL REASONABLE AND PRACTICABLE MEASURES SHOULD BE TAKEN TO MINIMISE THAT DUST. THIS CAN OFTEN BE ACHIEVED BY:

1. RETAINING EXISTING VEGETATION WHERE POSSIBLE.
2. STRIPPING AREAS PROGRESSIVELY AND ONLY WHERE IT IS NECESSARY FOR WORKS TO OCCUR.
3. EMPLOYING STABILISING METHODS SUCH AS MATTING, GRASSING OR MULCH.
4. DAMPENING THE GROUND WITH A LIGHT WATER SPRAY (CONTACT THE ENVIRONMENT PROTECTION AUTHORITY FOR REQUIREMENTS DURING EXTREME DROUGHT CONDITIONS).
5. ROUGHENING SURFACE OF EXPOSED SOIL.
6. COVERING STOCKPILES AND LOCATING THEM WHERE THEY ARE PROTECTED FROM THE WIND.
7. RESTRICTING VEHICLE MOVEMENTS.
8. COVERING THE LOAD WHEN TRANSPORTING MATERIAL.
9. CONSTRUCTING WIND BREAKS SUCH AS WIND FENCES IN ACCORDANCE WITH THE BLUE BOOK.
10. A WATER CART OR SUFFICIENT WATER SPRAYS SHALL BE MADE AVAILABLE AT ALL TIMES. IN ADVERSE CONDITIONS WHEN DUST CANNOT BE ADEQUATELY CONTROLLED WHEN WORKS ARE BEING UNDERTAKEN, WORKS WILL CEASE IN THESE AREAS UNTIL CONDITIONS IMPROVE.
11. WATER SHALL BE APPLIED TO SUPPRESS DUST FROM OPEN EARTHWORKS AS WELL AS UNPROTECTED STOCKPILES.
12. AREAS OF COMPLETED EARTHWORKS SHALL BE PROGRESSIVELY REHABILITATED WITH DRYLAND GRASS AND FENCED OFF AS SOON AS PRACTICABLE TO PREVENT FURTHER EROSION.
13. THE CONTRACTOR SHALL CONTACT ICON WATER TO OBTAIN RECYCLED WATER FROM THE LOWER MOLONGLO.
14. THE CONTRACTOR IS TO CONTACT THE WATER RESOURCES UNIT TO OBTAIN AN EXEMPTION TO USE NON-POTABLE WATER FROM ON OR OFF THE SITE IF REQUIRED.
15. DURING WINDY CONDITIONS, THE CONTRACTOR IS TO MINIMISE DUST GENERATING ACTIVITIES AND REGULARLY APPLY DUST SUPPRESSING MEASURES. IF DUST SUPPRESSION MEASURES FAIL, THE CONTRACTOR IS TO CEASE DUST GENERATING ACTIVITIES.

FIRE

1. BURNING OF WASTE MATERIALS ON THE SITE, SUCH AS PLASTICS, CHEMICALS OR WOOD THAT MAY BE PAINTED, CHEMICALLY TREATED OR CONTAMINATED WITH CHEMICALS IS ILLEGAL.
2. A FIRE MAY BE PERMITTED FOR HEATING PURPOSES PROVIDED IT IS IN A BRAZIER OR CONSTRUCTED FIREPLACE. ONLY SEASONED, UNTREATED TIMBER CAN BE BURNED FOR HEATING PURPOSES.

MAINTENANCE SCHEDULE

DAILY:

1. CHECK AND REINSTATE SILT CONTROL FENCES.
2. SWEEP AND REMOVE DIRT AND ANY OTHER BUILDING MATERIAL FROM GUTTERS, FOOTPATHS AND ROADWAYS ADJACENT TO THE SITE BY CLOSE OF BUSINESS AND PRIOR TO RAIN AND AS REQUIRED. ALL NECESSARY STEPS SHOULD BE TAKEN THAT ARE PRACTICAL AND REASONABLE TO MINIMISE DUST POLLUTION.

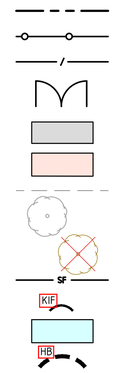
MONTHLY:

1. STABILISED CONSTRUCTION ENTRANCE AGGREGATE TO BE TURNED AND RENEWED.

DURING/AFTER WET WEATHER:

1. LIMIT CONSTRUCTION VEHICLE ACCESS TO SITE DURING AND IMMEDIATELY FOLLOWING WET WEATHER. CHECK AND REINSTATE SEDIMENT EROSION CONTROL MEASURES AND CHECK ROAD.

LEGEND



- SITE BOUNDARY
- SITE / SECURITY FENCE
- VERGE FENCE
- SITE GATES (INDICATIVE) -GATES TO OPEN INTO SITE
- STABILISED CONSTRUCTION ENTRANCE LOCATION
- SITE SHEDS (INDICATIVE)
- EXISTING CONTOUR
- EXISTING TREE TO BE RETAINED ×(INDICATIVE SYMBOL SHOWN)
- EXISTING TREE TO BE REMOVED
- SILT FENCE (PRIOR TO ANY EXCAVATION)
- KERB INLET FILTER
- SEDIEMNT & EROSION CONTROL POND
- HAY BALES

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Approved Signature			

Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW

Drawing Title: SEDIMENT EROSION CONTROL NOTES AND LEGEND

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EV	0910	B

REFERENCE:
1. FOR SEDIMENT EROSION CONTROL NOTES AND LEGEND REFER DRAWING EV-0910

SITE FENCING
SITE SHEDS AND AMENITIES (NOMINAL LOCATION)
SILT FENCING
CONSTRUCTION WASTE BINS (NOMINAL LOCATION)
CUT/WASH AREA
SITE ACCESS GATES TO SWING INTO SITE
STABILISED CONSTRUCTION ENTRANCE
DIGGINGS TERRACE
BLOCK BOUNDARY
LOT 768
DP1119757
EXISTING TREE TO BE REMOVED (TYPICAL).
SILT FENCING
TEMPORARY STOCK PILE (NOMINAL LOCATION)
SITE FENCING
EXISTING TREE TO BE RETAINED (TYPICAL).

NOTE:
POSITIONS SHOWN ARE INDICATIVE ONLY AND SUBJECT TO BUILDER INPUT

File Name: P:\2021\211286_L768-Thredbo\04_CAD\4.2_Drawings\CIV\211286-drg-civ-ev-0911.dwg

Rev	Description	Date	Drawn By
B	DEVELOPMENT APPLICATION	24.06.2022	DA
A	DEVELOPMENT APPLICATION	21.03.2022	MN

Scales: 0 5 7.5 10m
1:200 @ A1

North

DO NOT SCALE OFF DRAWINGS. VERIFY ALL DIMENSIONS ON SITE PRIOR TO WORK.
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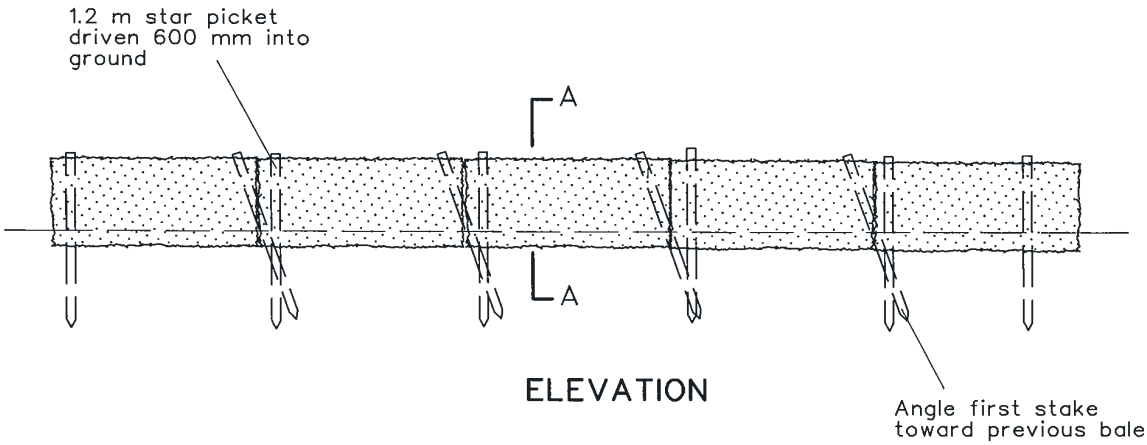
Client Logo: LE HUNTE PROPERTIES

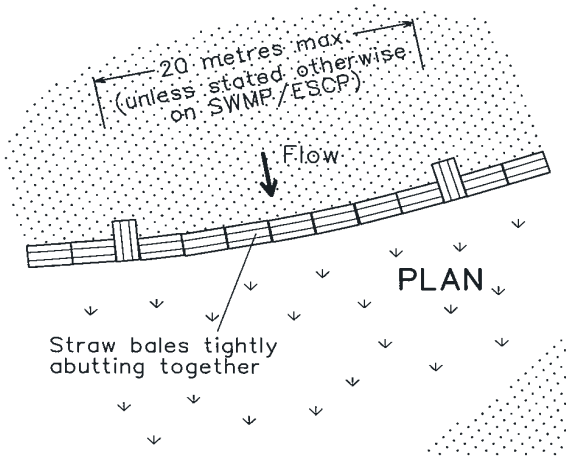
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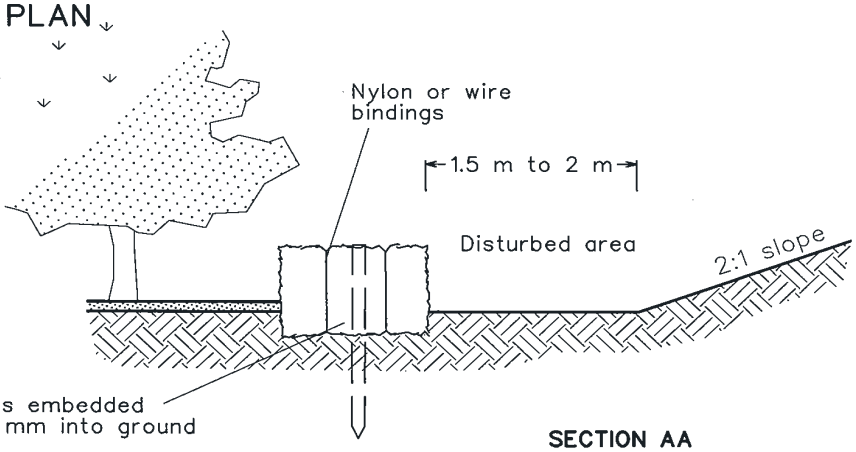
Original Size	A1	Drawn By: MN	Drafting Check: DA
Date Plotted	24-Jun-22	Designed By: LT	Design Check: JM
Coordinate System	STROMLO GRID	Approved: BC	Approved Date: 21/03/2022
Height Datum	AHD	Approved Signature	

Project Name and Location: MIXED USE DEVELOPMENT, THREDBO NSW
Drawing Title: SEDIMENT EROSION CONTROL PLAN

Project Number	Type	Discipline	Sub-Discipline	Drg No.	Rev
211286	DRG	CIV	EV	0911	B



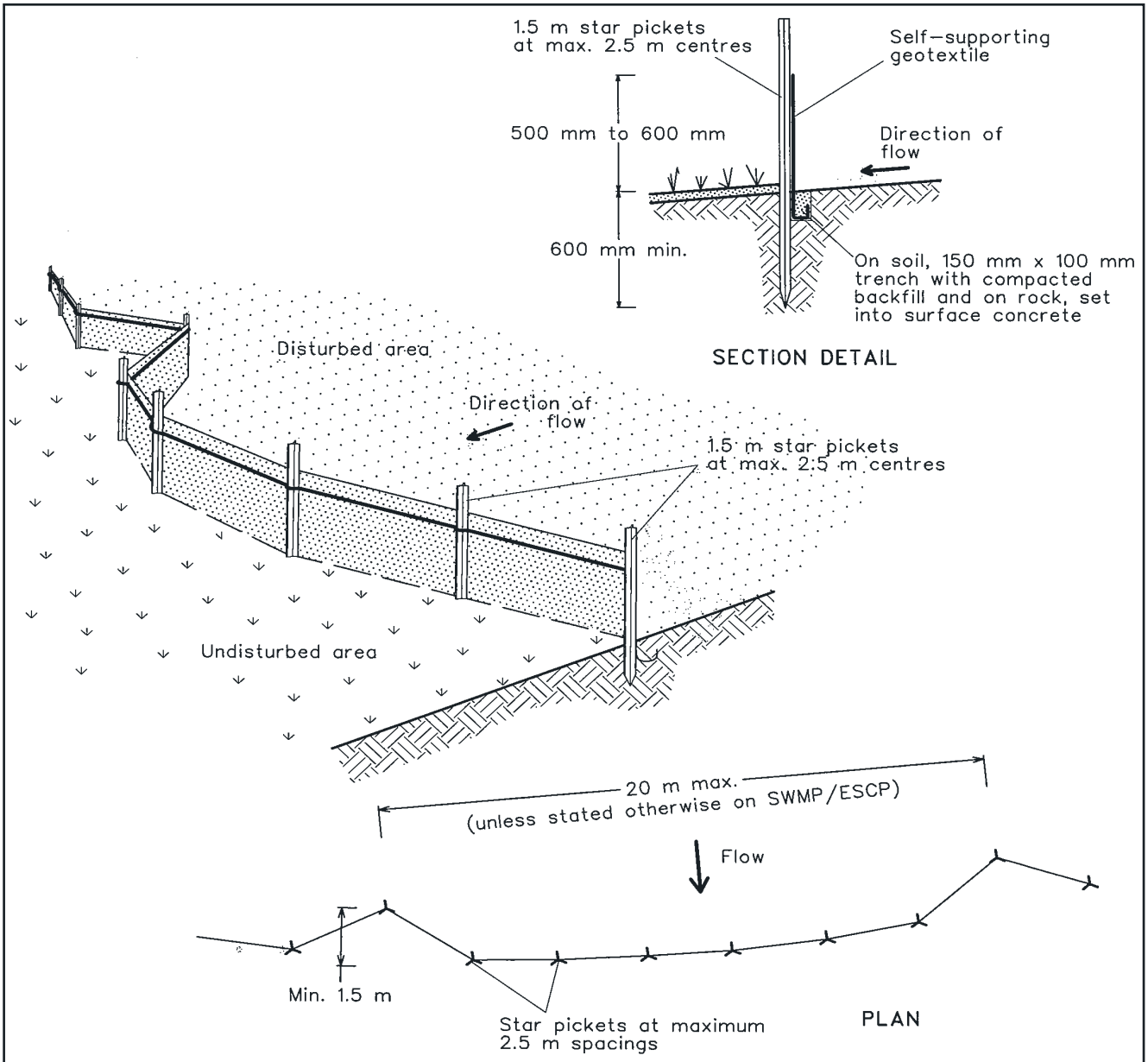




Construction Notes

1. Construct the straw bale filter as close as possible to being parallel to the contours of the site.
2. Place bales lengthwise in a row with ends tightly abutting. Use straw to fill any gaps between bales. Straws are to be placed parallel to ground.
3. Ensure that the maximum height of the filter is one bale.
4. Embed each bale in the ground 75 mm to 100 mm and anchor with two 1.2 metre star pickets or stakes. Angle the first star picket or stake in each bale towards the previously laid bale. Drive them 600 mm into the ground and, if possible, flush with the top of the bales. Where star pickets are used and they protrude above the bales, ensure they are fitted with safety caps.
5. Where a straw bale filter is constructed downslope from a disturbed batter, ensure the bales are placed 1 to 2 metres downslope from the toe.
6. Establish a maintenance program that ensures the integrity of the bales is retained - they could require replacement each two to four months.

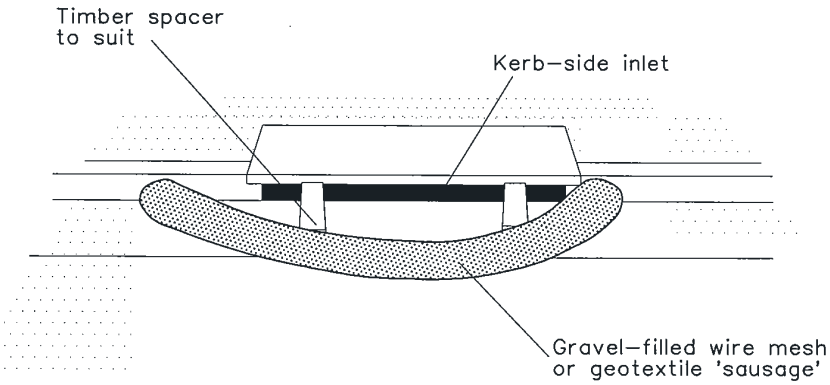
STRAW BALE FILTER SD 6-7

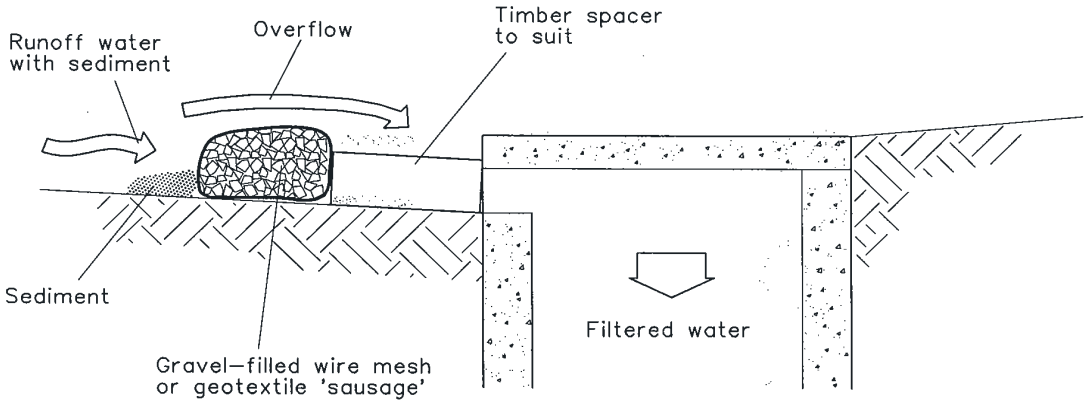


Construction Notes

1. Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
2. Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
3. Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
4. Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties or as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
5. Join sections of fabric at a support post with a 150-mm overlap.
6. Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

SEDIMENT FENCE — SD 6-8





NOTE: This practice only to be used where specified in an approved SWMP/ESCP.

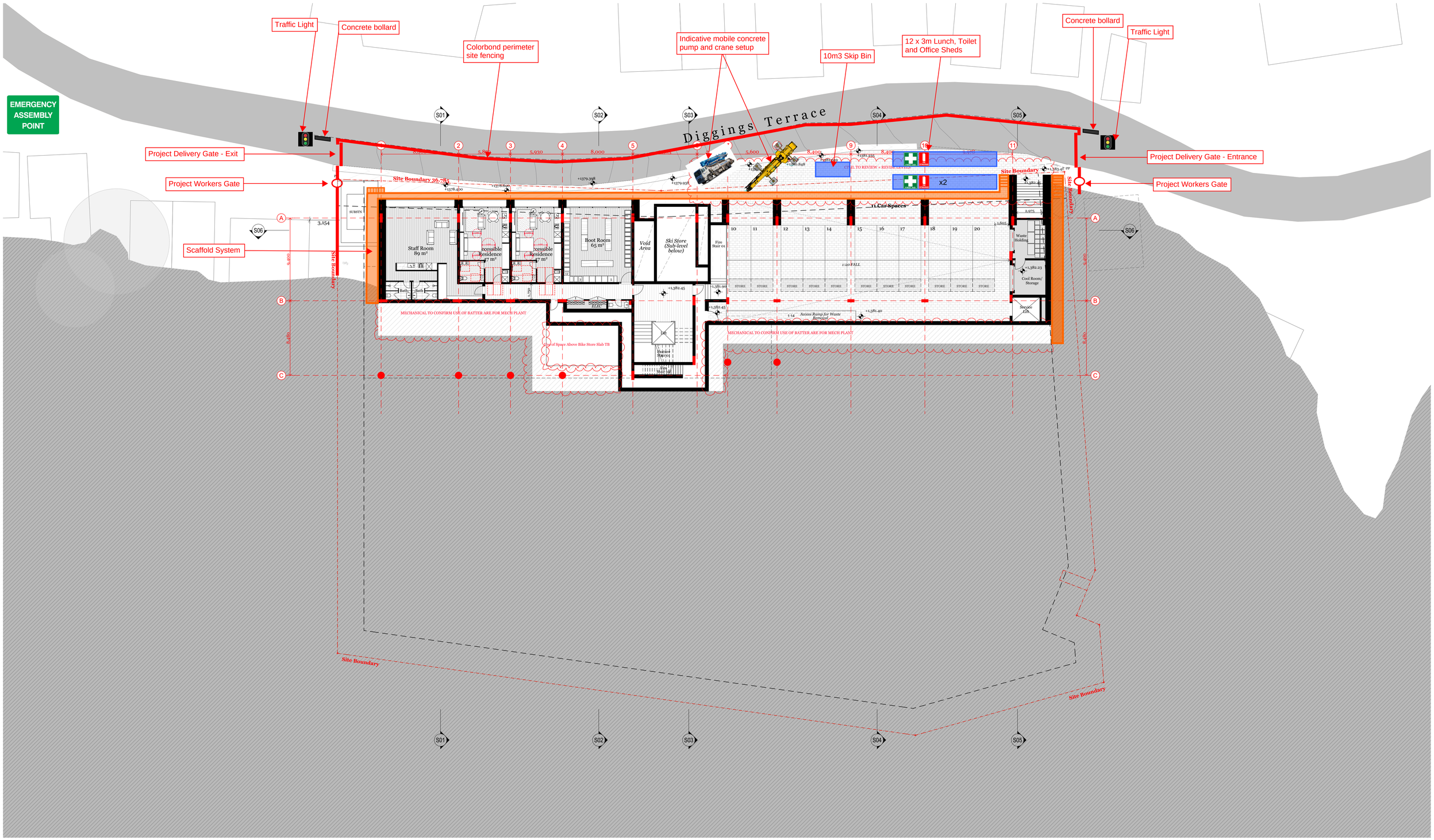
Construction Notes

1. Install filters to kerb inlets only at sag points.
2. Fabricate a sleeve made from geotextile or wire mesh longer than the length of the inlet pit and fill it with 25 mm to 50 mm gravel.
3. Form an elliptical cross-section about 150 mm high x 400 mm wide.
4. Place the filter at the opening leaving at least a 100-mm space between it and the kerb inlet. Maintain the opening with spacer blocks.
5. Form a seal with the kerb to prevent sediment bypassing the filter.
6. Sandbags filled with gravel can substitute for the mesh or geotextile providing they are placed so that they firmly abut each other and sediment-laden waters cannot pass between.

MESH AND GRAVEL INLET FILTER SD 6-11

ATTACHMENT B – SITE ESTABLISHMENT PLAN

SITE ESTABLISHMENT - STRUCTURE STAGE



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Rev.	Date	By	Ckd	Description
E	26/04/2022	NT	SO	For DA Coordination
F	29/04/2022	NT	SO	For DA Coordination
G	14/05/2022	NT	MR/SO	For DA Coordination

0 4 8 12 16 20m

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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Mezzanine
		Scale	1:200 @ A1
		Date	14/05/2022
Client	Le Hunte Properties	Drawing Number	DA201
		Revision	G

ATTACHMENT C – HERITAGE/ECOLOGY BDAR EXTRACT

VEGETATION NOT AT HEIGHT TO BE CLASSIFIED AS TREE:
TO BE REMOVED

G1
Est

6
Evi

G3
EPA

30
Eru

UNASSESSED TREES
TO BE REMOVED

13
Epa

12
Epa

14
Epa

16
Evi

G2
Evi

63
Esp

LEGEND

- CONTOURS
- TREE TO BE REMOVED
- TREE TO BE RETAINED

TREE QUALITY

- HIGH
- MEDIUM
- POOR
- G1 TREE GROUP
- TREE PROTECTION FENCING

Existing Tree Species	
Code	**Name**
Esp	Eucalyptus species
Evi	Eucalyptus viminalis
Epa	Eucalyptus pauciflora
Est	Eucalyptus stellulata

NOTES

1.0 GENERAL
ALL WORK MUST BE CONTAINED WITHIN THE SITE EXCEPT FOR APPROVED SERVICE CONNECTIONS IN THE VERGE.

1.2 SUPERVISION
A SUITABLY QUALIFIED LANDSCAPE ARCHITECT OR HORTICULTURALIST SHALL BE EMPLOYED TO OVERSEE WORK IN THE VERGE TO ENSURE ALL WORKS ARE PERFORMED TO INDUSTRY STANDARDS. THEY MUST BE PRESENT DURING ANY CULTIVATION OR RESTORATION OF THE VERGE.

2.0 STANDARD CONDITIONS

THE FOLLOWING CONDITIONS APPLY IF ANY DEVELOPMENT ACTIVITY OCCURS ON THE SITE:

A COPY OF THESE CONDITIONS SHALL BE KEPT ON SITE FROM THE TIME THAT THE PROTECTIVE FENCES ARE ERECTED TO THE TIME THAT ALL WORKS ARE COMPLETED ON SITE

TREE REMOVAL
ALL PROTECTED TREES ARE TO BE RETAINED UNLESS OTHERWISE STATED IN THE SPECIFIC CONDITIONS BELOW.

FENCING OF PROTECTED TREES
ALL TREES THAT ARE MARKED TO BE RETAINED SHALL BE FENCED OFF BY A CONTINUOS 1800MM HIGH CHAIN WIRE PROTECTIVE FENCE AT THE EXTENT OF CANOPY DRIP. THE PROTECTIVE FENCES SHALL BE ERECTED PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS, CONSTRUCTION OR DEMOLITION ACITIVITY ON ANY PART OR STAGE OF A DEVELOPMENT AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION WORKS ARE COMPLETED. THE PROTECTIVE FENCE SHALL BE MAINTAINED IN GOOD ORDER FOR THE DURATION OF ANY CONSTRUCTION WORKS. A TREE PROTECTION SIGN SHALL BE PROMINENT DISPLAYED ON ANY PROTECTIVE FENCES AROUND PROTECTED TREES. ACTIVITIES ARE NOT PERMITTED IN THE FENCED OFF AREA UNLESS OTHERWISE STATED IN SPECIFIC CONDITIONS BELOW.

3.0 LANDSCAPE MANAGEMENT AND PROTECTION

3.1 EXISTING TREES
CROWN AND APEX OF CANOPIES SHALL NOT BE ALTERED OR REDUCED UNLESS SPECIFIED FOR BUSHFIRE MAINTENANCE. ENSURE LIFTING EQUIPMENT AND LOAD ARE CAPABLE OF OPERATING IN A MANNER THAT IT CLEARS THE HEIGHT AND WIDTH OF THE TREE CANOPY WITHOUT DAMAGING THE CROWN. ENSURE CONSTRUCTION EQUIPMENT CAN PASS BENEATH THE TREES' LOWEST LIMB THROUGH DESIGNATED DRIVEWAY ACCESS.
WHERE TREE CANOPIES OVERHANG ROOFLINES, LIGHT PRUNING TO REDUCE THE EDGES OF THE CANOPY EXTENT MAY BE CARRIED OUT

3.2 TREE REMOVAL
TREES: 6, 12, 13, 14,16, 30 AND TREE GROUPS 2(PARTIAL) AND 3 ARE THE ONLY TREES TO BE REMOVED.

4.0 TREE ROOT PROTECTION
EXCAVATION WITHIN THE DRIP ZONE OF TREES SHALL BE RESTRICTED TO ONE SIDE OF THE TREE ONLY AND SHALL HAVE PRIOR APPROVAL FROM ENVIRONMENT AND ASSET TEAM DO NOT SEVER LARGE ROOTS (>30MM DIAMETER) CLOSER THAN HALFWAY FROM THE DRIP-LINE TO THE TRUNK. HAND TRENCH TO A DEPTH OF 300MM PRIOR TO ANY MECHANICAL TRENCHING BEING UNDERTAKEN. CUT ALL ROOTS CLEANLY WITH EQUIPMENT SPECIFICALLY DESIGNED FOR THIS PURPOSE OR BY SUITABLE PRUNING EQUIPMENT PROTECT EXPOSED ROOTS FROM DESICCATION BY LIGHTLY WATERING OR COVERING WITH HESSIAN WHICH MUST BE KEPT MOIST. MAINTAIN THE GOOD HEALTH OF THE TREES THAT HAVE HAD DISTURBANCE IN THEIR ROOT ZONE BY CONTINUAL WATERING. AT NO TIME SHALL THE DISTURBED AREA BE ALLOWED TO DRY OUT TO THE DETRIMENT OF THE TREES HEALTH

5.0 BRANCH PROTECTION
ON THE ADVICE OF THE PROJECT ARBORIST AND WITH WRITTEN APPROVAL FROM LESSEE OF THE BLOCK ON WHICH ANY TREE IS LOCATED, REMOVE ANY BRANCHES THAT ARE IMPEDING ACCESS, AND TRUNK WRAP THOSE THAT ARE LIKELY TO BE DAMAGED DURING WORKS AS PER FIGURE 4, AS4970, OR SIMILAR.

REVISION

C	For Approval	04/07/22
B	For Approval	01/07/22
A	For Client Review	27/04/22

ISSUE TYPE

FOR DEVELOPMENT APPLICATION ONLY

Drawn By **CS MR BT**
Checked By **RA**

SCALE

Scale at A1 1:200
Scale at A3 1:400

0m 2.5 5 10 15 20

Figured dimensions shown on drawings take precedence over scaled dimensions. Do not scale off drawings

CONSULTANTS

Architect
DKO

Civic & Structural
Sellicks

Planners
SJB

CLIENT

Le Hunte PROPERTIES

Thredbo Lot 768
Tree Management Plan

Tait Network

PROJECT NUMBER
21/37

REVISION
C

DRAWING NUMBER
110

8. Recommendations

The following recommendations are based on a number of considerations including:

- Background Aboriginal heritage research into the area;
- Assessment of Landscape ;
- Land use and disturbance assessment;
- Visual inspection;
- Consideration of the impact of the proposed works; and
- Legislative context for the development proposal.

Based on an assessment of the project, the location and previous level of disturbance, the proposed work can proceed with caution with the following recommendations:

1. All works must be constrained to the area assessed by this document and any activity proposed outside of the current assessment area should also be subject to an Aboriginal heritage assessment.
2. All access to the site and laydown areas must be within the assessed Proposal Area otherwise visual inspection of the sites by a qualified archaeologist is required.
3. If any items suspected of being Aboriginal in origin are discovered during the work, all work in the immediate vicinity must stop and the NSW Environment Line (1300 361 967) notified. The find will need to be assessed and, if found to be an Aboriginal object, an Aboriginal Heritage Impact Permit (AHIP) may be required.

Le Hunte Properties Pty Ltd is reminded that it is an offence under the *National Parks and Wildlife Act 1974* to disturb, damage or destroy an Aboriginal object without a valid AHIP.

8. Mitigating and Managing Impacts

8.1 Mitigation Measures

A summary of key measures required to mitigate the impacts of the proposal are provided below. Mitigation measures are proposed to manage impacts, including proposed techniques, timing, frequency, responsibility for implementing each measure, risk of failure, and an analysis of the consequences of any residual impacts are provided in Table 8-1 below.

Table 8-1 Mitigation measures proposed to avoid and minimise impacts on native vegetation and habitat

Mitigation measure	Proposed techniques	Timing	Frequency	Responsibility	Risk of failure	Risk and consequences of residual impacts
Displacement of resident fauna through vegetation clearing and habitat removal						
Time works to avoid critical life cycle events;	• Clearing should occur during Autumn (March to May) to avoid the peak breeding season for most wildlife and tourist peak season being June to October.	Construction.	Regular.	Contractor.	Moderate.	Species not detected during pre-clearing surveys may be impacted. Hollow bearing trees may have different fauna present at a later stage.
Implement tree clearing protocols including pre-clearing surveys, daily surveys and staged clearing, the presence of a trained ecological or wildlife handler	• Pre-clearing surveys by an ecologist or wildlife handler. • Tree clearing procedure including a fauna spotter/ecologist present during removal of hollow bearing trees, timed to avoid breeding periods for hollow dependent fauna such as Gang-gang Cockatoo, from September to February	Construction.	Regular.	Contractor.	Moderate.	Species not detected during survey but may be present on site
Relocate habitat features (fallen timber, hollow logs) where possible	• Fauna spotter or Ecologist to do this during tree removal works	Construction.	Regular.	Contractor.	Moderate.	Species not detected during pre-clearing surveys may be present on site
Indirect impacts on native vegetation and habitat						

Clearing protocols that identify vegetation to be removed, prevent inadvertent damage and reduce soil disturbance	• Approved clearing limits to be clearly delineated with temporary fencing or similar prior to construction commencing. • In areas to clear adjacent to areas to be retained, chainsaws would be used rather than heavy machinery to minimise risk of unauthorised disturbance.	Construction.	Regular.	Contractor.	Low.	Clearing may exceed what has been assessed and approved.
Adaptive dust monitoring programs to control air quality;	• Daily monitoring of dust generated by construction activities; and • Construction would cease if dust observed being blown from site until control measures were implemented; and • All activities relating to the proposal would be undertaken with the objective of preventing visible dust emissions from the development site.	Construction	Regularly	Contractor	Moderate	Sedimentation in waterways. Air pollution
Temporary fencing and signage to protect significant environmental features such as adjoining vegetation	• Prior to construction commencing, exclusion fencing, and signage would be installed around boundary to protect vegetation on adjoining properties	Construction	Regularly	Contractor	Low	Inadvertent removal of vegetation and fauna habitat off site
Installation of sediment controls to prevent sediment runoff into creek	• A sediment control plan would be prepared in conjunction with the final design and implemented; and • Spill management procedures would be implemented.	Construction	Regular	Contractor	Moderate	Impacts may occur to Thredbo River 74m downslope via stormwater detention if sedimentation control plan not implemented

Hygiene protocols to prevent the spread of weeds or pathogens between infested areas and un-infested areas; and	• A Weed Management procedure would be developed to prevent and minimise the spread of weeds for declared priority weeds under the *Biosecurity Act 2015* during and after construction; • Weed hygiene protocol in relation to plant, machinery, and fill; • Wash down site vehicles prior to entering the site; • Any occurrences of pathogens such as Chytrid Fungus and Phytophthora would be monitored, treated, and reported	Construction, Operation	Regular	Contractor	Moderate	Weed encroachment and introduction of pest fungus to a National Park
Staff training and site briefing to communicate environmental features to be protected and measures to be implemented.	• Site induction; and • Toolbox talks.	Construction	Regular	Contractor	Moderate	Impacts to native vegetation or threatened species if Staff training is not being followed
Prescribed biodiversity impacts						
Appropriate landscape plantings of local indigenous species to replace loss of vegetation	• Select indigenous plants and part of landscape planning	Construction	Regular.	Contractor.	Low	Minimal risk
Enforce site speed limits (40km) to reduce impacts of vehicle strikes on threatened fauna	• Traffic protocols as part of traffic management plan	Construction	Regular.	Contractor.	Low	Unnecessary injury or death of fauna

Project Management Plan

Diggings Terrace – Lot 768

Project scope of works:

Alpine resort style development comprising parking, bar, restaurant, gym/yoga/spa/wellness space, 2 accessible units, 14 residential terraces & 5 mountain homes.

Start date late 2022

Project Management Plan (PMP) Review Record

Plan Version:	1	Version Date:	01/04/22
Reviewed and updated by:		Approved by:	
Name:	Chris Ison	Name:	Ben Eddy
Role:	HSEQ Advisor	Role:	Project Manager
Developed in consultation with the Construction Control BMS control group and Safety Advisors			

*The project teams acknowledgement of the PMP will be recorded in the SWMS/Safety Plan module of Simple.

Comments / Changes made in this version of the PMP:
1. Plan amendments to reflect site team and project requirements – 28/03/2022
2.
3.
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1 Acronyms

- CC – Construction Control
- HSEQ – Health, Safety, Environmental and Quality
- PCBU – Persons Conducting a Business or Undertaking
- CC BMS – Business Management System
- Simpel – Cloud based project management system
- Documents commencing with a;
    - Q are stored in SharePoint, and;
    - S are completed directly in Simpel
- PMP – Project Management Plan
- PEP – Project Emergency Plan
- PRR – Project Risk Register
- PRM – Project Responsibilities Matrix
- SWMS – Safe Work Method Statement
- JSA – Job Safety Analysis
- SDS – Safety Data Sheet
- LTI – Lost Time Injury
- MTI – Medical Treatment Injury
- LTIFR – Lost Time Injury Frequency Rate
- MTIFR – Medical Treatment Injury Frequency Rate
- FE – Fire Extinguishers
- PPE – Personal Protective Equipment
- TBT – Toolbox Talk
- DO – Dangerous Occurrence
- WAO – Work Activity Observation
- CAR – Corrective Action Request
- EPT – Explosive Power Tool
- VOC – Verification of Competency
- ERT – Emergency Response team
- ITP – Inspection and Test Plan
- DRA – Design Risk Analysis
- Onboarding – CC company induction

2 Definitions

- **Hazard or Aspect** – A workplace hazard or environmental aspect is a situation that poses a level of threat to life, health, property, or environment. The situation could involve a task, chemical or the equipment used.
- **Risk or Impact** – Hazard and possibility interact together to create risk. Risk is the potential of losing something of value.
- **Reasonably Practicable** – that which is, or was at a particular time, reasonably able to be done in relation to ensuring health and safety, taking into account and weighing up all relevant matters including:
  (a) the likelihood of the hazard or the risk concerned occurring; and
  (b) the degree of harm that might result from the hazard or the risk; and
  (c) what the person concerned knows, or ought reasonably to know, about:
    (i) the hazard or the risk; and
    (ii) ways of eliminating or minimising the risk; and
  (d) the availability and suitability of ways to eliminate or minimize the risk; and
  (e) after assessing the extent of the risk and the available ways of eliminating or minimising the risk—the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk
- **Enclosed Area** – A place is *75% or more enclosed* if the open area of the walls and overhead cover of the place that opens directly to the outside air is 25% or less of the sum of—
  (a) the total closed area of the walls and overhead cover of the place; and
  (b) the total open area of the walls and overhead cover of the place
- **Complex Lift** – A large lift with uneven loads; using dual cranes; or a lift expected to use 90% of the crane lifting capacity or more

3 Introduction and Development

Construction Control is committed to providing a safe and healthy working environment, whilst delivering high quality, sustainable projects. To achieve this outcome Construction Control implemented the CC Business Management System (CC BMS) which meets the relevant legislative, ISO 45001, ISO 14001, ISO 9001 and OFSC accreditation requirements.

The core elements that make up the BMS are the:

1. Project Management Plan (PMP)
2. Project Risk Register (PRR)
3. Project Emergency Plan (PEP)
4. Project Responsibilities Matrix (PRM)
5. CC BMS Policies, Procedures and Forms

The template documents are available electronically in the CC BMS and site-specific version are maintained in Simpel.

The site-specific Project Management Plans and revisions will be communicated to subcontractor supervisors and project teams carrying out construction work in connection with the project via Simpel Document Transmittals.

The workers on site will have access to the plan and its revisions by scanning the QR document code which is available on the project site notice board.

The *Q050101 BMS Outline* is a searchable reference tool that defines the CC BMS and provides guidance to the location of all documents within the system.

Each section in this plan applies legislative and industry requirements to manage each of the safety procedures involved in the construction process.

The plan also references associated forms and records for managing HSEQ on the project.

If a contractor has a form or record that covers the same requirements of the Construction Control document, the contractor may, with the permission of a Construction Control representative, allow the use of the alternative contractor form or record.

CC Policies are available in the CC BMS and relevant Policies are issued to Sub-contractors at tender.

WH&S, Quality Assurance and Environmental Policies must be displayed at all Construction Control locations.

Associated Corporate Procedure: 1.0 CM Policies

4 Responsibilities and Accountabilities

All CC staff acknowledge and sign a Role Statement at Onboarding (*CC BMS Folder 2.0 Company Management*). Following promotion or periodic review an updated or new Role Statement may be developed and acknowledged by staff. Records of company Role Statements will be maintained in Employment Hero.

A project specific *Q070307 Project Responsibilities Matrix* (PRM) is to be developed for each new project that delegates the requirements of the CC BMS among the project team, in consideration of experience and training. The PRM includes Role Statements that are adjusted as required to become site specific and applicable to each project. The PRM will be acknowledged electronically in Simpel.

Individual project responsibilities are further defined within the PMP, PRR, PEP and CC BMS.

4.1 Project Responsibilities Matrix

At the commencement of each project, before construction commences, a Project Responsibilities Matrix Start-up Meeting will occur. The project team will attend this meeting and the *Q070307 Project Responsibilities Matrix* will be used to allocate the CC BMS responsibilities amongst the individual team members and develop site specific role statements. The *Q070307 Project Responsibilities Matrix* is to be made site specific for the project, in consideration of the skills and experience of the team.

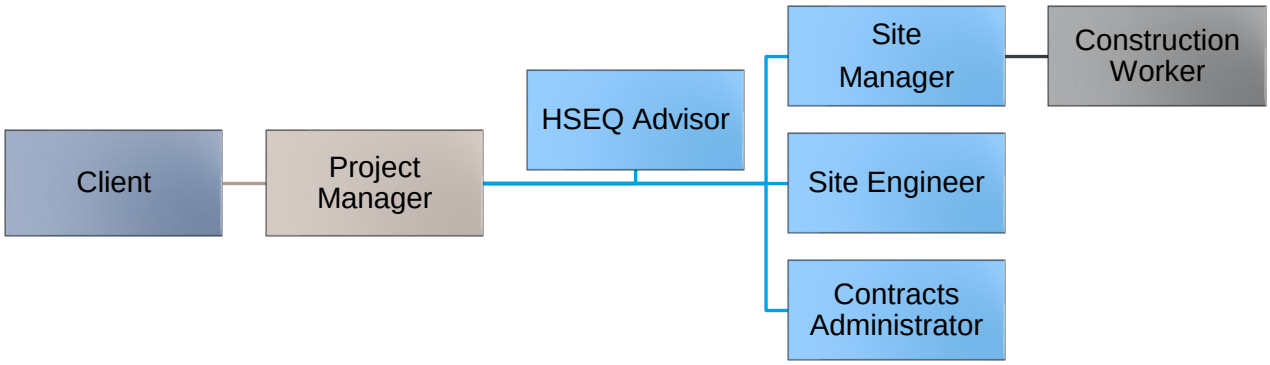
Before project commencement, the completed *Q070307 Project Responsibilities Matrix* is to be uploaded to Simpel where all staff are to acknowledge their commitment to completing the sections of the CC BMS allocated to them for the project.

The *Q070307 Project Responsibilities Matrix* is to be reviewed for staff changes and construction phase updates on a quarterly basis during the *S070801 Jan, April, July, October Project Quarterly Review.* The updated matrix is to be uploaded to Simpel, with all staff to acknowledge their ongoing commitment to completing the sections of the BMS allocated to them for the project.

Associated Corporate Procedure: 7.02 Establishing Project Teams and Resources

4.2 Project Organisational Structure

The below project organisational structure will be amended as required to reflect the project structure. Names of workers appointed to each role are to be included in the table below.



PROJECT TEAM ROLE	TEAM MEMBER NAME	AS PER BMS
Project Manager	Ben Eddy	Yes☒ No☐
General Foreman	Matt Cranny	Yes☒ No☐
Site Engineer	Michael Frino	Yes☒ No☐
HSEQ Advisor	Chris Ison	Yes☒ No☐
Contracts Administrator	Mel Petrie	Yes☒ No☐
Construction Worker	TBC	Yes☒ No☐

5 Project Objectives and Targets

In order to achieve successful outcomes, Construction Control has set the following objectives and targets for this project which are reviewed and monitored during monthly *Q020207 BMS Performance Meetings*.

Associated Corporate Procedure: *2.09 – Objectives and Targets*

HSEQ Targets:

- **Total Recordable Injury Frequency Rate** (TRIFR) Below the CC target updated each financial year.
- **Lost Time Injury Frequency Rate** (LTIFR) Below the CC target updated each financial year.
- **Medically Treated Injury Frequency Rate** (MTIFR) Below the CC target updated each financial year.
- **Zero incidents** with members of the public.
- **Enforcement Action** Zero enforcement actions taken against CC.
- **Incident Reporting** 100% reporting of all incidents.
- **Contractor Procurement Assessment** 80% of Sub-contractors engaged will have a *Q080203 Tender Evaluation Matrix* completed.
- **Contractor SWMS Review** 100% of Sub-contractors to be operating under a reviewed management plan and/or SWMS prior to start.
- **Plant Operational Permit** 100% major plant have a Plant Operational Permit (Plant Induction) completed prior to commencing works.
- **Internal Audits**. Achieve a result of greater than 90% for internal audits; and
- **Inspections & Observations** Completed in accordance with PMP requirements.
- **Waste Disposal** 80% total recycled waste where waste disposal is a Construction Control responsibility.
- **Corrective Actions** 85% of CARS closed out within agreed timeframes.

5.1 Monitoring

Monitoring compliance with the Project Risk Register (PRR) controls (that have been developed from Legislation, Codes of Practice and Standards) is to be completed during routine site inspections, work activity observations and audits as per *BMS Procedure 3.04 HSEQ Inspection, Monitoring & Review*. Project Teams are to ensure that records of monitoring activities are maintained using S030433 Project Diary entries in the Simpel Site Diary module and by completing the relevant forms assigned in the *S070307 Project Responsibilities Matrix*.

5.2 Evaluating

Evaluating compliance and the effectiveness of controls shall be completed by the Project Manager using the monthly *S020207 BMS Performance Meetings* and the *Project Pre-Commencement* and *Quarterly Review* process.

CC management reviews will occur in accordance with the *Q040104 Corporate BMS Schedule* using the *S040102 Project BMS Audit Record.*

5.3 Access to legal and other requirements

Where workers require Environmental, WH&S or Quality Assurance Legislation, Codes of Practice and Standards documents and guidance materials they are to request the information / publication from the Project Manager who will source the relevant material/s.

Associated Corporate Procedure: *3.03 – BMS Legal & Other Requirements*

6 Consultation and Communication

Construction Control shall establish and maintain appropriate processes for consultation on projects to allow effective two-way communication. This will assist Construction Control and Contractor Management in delivering the project, monitoring and reviewing work practices, and discussing the HSEQ issues affecting workers onsite.

6.1 Project Meeting Requirements

MEETING TYPE	REQUIRED	FREQUENCY
Project Control Group (PCG) Meetings	Yes☒ No☐	1 per month
Consultant / Design meetings	Yes☒ No☐	2 per month
Whole of Site Toolbox meetings	Yes☒ No☐	1 per week
Sub-contractor coordination meetings	Yes☒ No☐	2 per month
Work Health and Safety committee meetings	Yes☒ No☐	1 per month
S030402 Project Inspection Record	Yes☒ No☐	4 per month
S030413 Work Activity Observations	Yes☒ No☐	4 per month

6.2 Worker Consultation

Construction Control will establish on project commencement the following worker consultation measures:

Upon the commencement of works on site a single Work Group (WG) representing all site personnel shall be established. Once the WG is established an election shall be facilitated to establish a WHS Committee within 1 month as required by legislation. Once onsite personnel exceed 25 in number, the committee shall review the WG and may establish further groups in consultation with site personnel, as well as the facilitate a HSR Election.

Construction Control will conduct either a weekly whole of site toolbox talk (see 11.9) and *S030105 Weekly Hazard Forecast* or a Q030109 Daily Prestart to nominate the upcoming major hazards on the project.

WHS will be a key agenda item for all Sub-contractor coordination meetings. Any non-urgent and ongoing issues raised in Toolbox Talks, by an HSR or WHS Committee will be addressed in Sub-contractor coordination meetings.

When making decisions on the adequacy of facilities, forecasted high risk construction work, coordination of works with trades and general safety for the welfare of workers, the workers will be consulted at the weekly Toolbox Talks to ensure amenities provided are sufficient for use and control measures for managing the hazards and risk are appropriate on site. Proposal of changes and feedback that may affect the health and safety of workers during works on site will be documented at the end of the Toolbox Talk.

On request CC shall establish additional worker consultation units to meet project needs, such as coordination committees, design committees, performance meetings, etc.

6.3 Health and Safety Committee (HSC)

A Health and Safety Committee is designed to oversee the improvement of work safety at a higher level. The committee provides a formal means of discussing and resolving project safety issues.

Key points:

- The Construction Control HSEQ Advisor will have completed the mandatory training prior to the establishment of the committee.
- Comprise of at least an equal ratio of workers (workers include tradespeople, Site Manager, Leading

Hand and CW) to management (HSEQ Advisor, Project Manager).
- Elected HSR's will be members of the Health and Safety Committee, if the HSR consents.
- Committee members will be trained (as required by legislation) within three months of the formation of the committee. New committee members will have three months to complete the training upon joining the committee.
- Meetings will be conducted as agreed by the elected Health and Safety Committee and will produce documented recommendations (using *Q020210 Health and Safety Committee Minutes* as required); and
- Elect a chairperson to lead the meeting, post the records to the notice board within a reasonable timeframe, and ensure the minutes are sent to all relevant contractors.

6.4 Health and Safety Representative (HSR)

A Health and Safety Representative (HSR) may be elected on the project if requested.

The Health Safety Representative/s are there to talk for, and to the workers regarding safety issues and advise employer/s about potential risks, dangerous occurrences and work health and safety issues that affect the workers. The HSR must be elected or endorsed by the workers on site.

6.5 Business Management System (BMS) Alerts

The BMS Alert process will be used to communicate relevant Health, Safety, Environmental and Quality information to all employees, contractors, and other relevant parties. Information to be communicated may include, but is not limited to:

- an injury alert.
- industry information & alerts; and
- Corrective Actions and/or new procedures.

6.6 Toolbox Talks

Toolbox Talks are a documented meeting to discuss relevant information amongst all employees and site workers. Construction projects should conduct at least one Toolbox meeting per week to maintain effective communication. These meetings may include:

- Upcoming site activities, hazards, and controls
- BMS Alerts
- Work Safety Committee meetings items
- Site issues affecting workers; and/or
- Purchasing decisions that may affect employees or workers

Q/S020209Toolbox Talks will also be used to provide a forum for workers to communicate back to Construction Control and will be reviewed. Feedback items raised will be reviewed by management and in Work Safety Committee Meetings.

All Toolbox Talks are to be saved in Simpel as electronic forms or hardcopy attachments.

6.7 Project Signage

The Project Manager must erect the following project signage where applicable as a minimum:

- Visitor signage directing visitors to site office.
- Gate numbers.
- Mandatory PPE requirements.
- Company name undertaking works e.g., Construction Control Australia Pty Ltd
- Company licence number details and company ACN.
- Construction site identification ('Construction Control' & 'Construction site – authorised Persons Only').
- After Hours contacts.
- Speed limits; and
- Hazard specific signage e.g., Deep excavation.

Any hoarding signage is to be approved by the Managing Director before purchase and erection.

6.8 Project Notice Board

The Project Manager must ensure there is a Project Notice Board erected near the main project entry. The Project Notice Board must have the following where applicable as a minimum:

- WHS, Quality Assurance and Environmental Policies.
- Site Rules and Disciplinary Action.
- Details and picture of the project First Aid and Emergency Personnel.
- Health and Safety committee membership details and meeting records.
- Notices issued by Regulatory Authorities such as EPA or SafeWork/WorkSafe
- Relevant BMS Alerts.
- Site layout plan.
- Internal and external Traffic Management Plans.
- Weekly Hazard Forecast or Daily Pre-Start; and
- Project Emergency Plan

6.9 Additional Health, Safety and Environmental Information

In addition to the above sections, Construction Control also provides communication and consultation through various meetings such as client, contractor and Project BMS Performance meetings.

Hazards, risks and control measures associated to scopes of works, including emergency response arrangements, shall be communicated to workers via Safe Work Method Statements (SWMS) which include all applicable controls documented in the Project Risk Register.

7 Training & Competency

Construction Control will ensure that all persons undertaking construction works are trained and competent to carry out tasks associated to their work requirements.

All trainers and assessors must be appropriately qualified with a Trainers and Assessors qualification (TAE) and be knowledgeable in all relevant aspects of their particular field and familiar with relevant legislation, codes of practice and standards in accordance with the Work Safety Regulation 2011.

Where VOCs are not issued by a registered training organisation (RTO) the trainer / assessor deeming the operator competent must make available evidence of their TAE qualification and evidence of competency in the specific activity.

In addition to specific licensing, qualification and certification, ALL workers are to be given training prior to undertaking construction work to ensure they are competent to carry out their works safely. This training includes, but is not limited to, the following provided by the workers employer:

- National Construction Induction (White Card).
- Asbestos Awareness Training (mandatory in the ACT).
- Working Safely with Asbestos Containing Materials (mandatory for Services Trades in the ACT)
- Induction & training into the applicable SWMS for all tasks to be undertaken.

And the following provided by Construction Control.

- Induction & training into the specific project requirements, including the relevant information contained in this Project Management Plan.

Training / Competency per activity or item of plant is defined in the *Q030104 Project Risk Register* along with the *Q030409 Inspection and Competency Compliance Matrix* – available on request to all contractors.

Further monitoring will be undertaken via *S030402 Project Inspections*, Project Audits, S030413 Work Activity Observations Inspections, and day to day observations.

Construction Control requires that all personnel in supervisory positions complete appropriate training in Risk Management and encourage all workers to complete Safe Work at Height, Electrical Awareness and Manual Handling training.

7.1 Workers requiring Licenses, Qualifications, Certification

All works for which a license, qualification, certificate of competency that is mandated must be:

- identified and incorporated within the SWMS.
- checked in the induction, with details taken of all licenses, qualifications, certificates.
- Monitored on-site *through S030402 Project Inspection Record, S040102 Project BMS Audits, S030413 Work Activity Observations*, and day to day observations recorded in the Simpel Site Diary.

Refer to the *S030409 Inspection / Competency Matrix* for an overview of required training and competency for common activities on site including Plant and Equipment.

7.2 High Risk Work (HRW) Licencing

All workers undertaking High Risk Work must hold a current High-Risk Work Licence before undertaking this work. This includes but not limited to:

- Scaffolding.
- Rigging/Dogging work.
- Asbestos assessment or removal;
- Crane and hoist operation.
- Forklift operation; and
- Pressure equipment operation

CC requires a Certificate of Competency or Verification of Competency (VOC) for earthwork machine operation. This includes Dragline, Excavator, Front-end loader, Front-end loader / backhoe and Front-end loader of the skid-steer type.

All training and assessment for High-Risk Work must be conducted through a Registered Training Organisation (RTO) that has the relevant competency unit in their scope of registration.

7.3 Construction Control Employees

Upon commencement, Construction Control projects shall produce a site specific *Q140605 Training and Competency Matrix*, in accordance with Procedure *14.16 Setting Project Training Requirements*, to ensure all site team members have the required training relevant to their position. A quarterly review of these training requirements is to occur in line with *Procedure 14.16*.

Any identified or requested staff training is to be submitted using *Q140601 Training Booking Form* in line with *Procedure 14.6 Staff Training*.

All applicable Construction Control employees shall be trained in appropriate risk management and management system procedures to allow them to perform their job effectively in relation to the degree of risk and project complexities.

Training shall include but not limited to:

- *Q140201 Health, Safety, Environmental and Quality System Overview*.
- Fire extinguisher training to familiarize workers with the general principles of fire extinguisher use and the hazards involved in initial stages of fire-fighting.
- Spill response training to familiarize workers with the general principles of spill-kit use and the hazards involved in initial stages of managing spills.
- Site Inspection training to familiarize supervisors with the general principles of site inspections and the key aspects involved in completing an effective inspection in consultation with other trades.
- Water Discharge training to familiarize workers with the general principles of testing and discharging water from construction projects into waterways.
- Emergency Response training to familiarize workers with the site-specific emergency scenarios from the Project Emergency Plan (trench collapse, etc) and immediate response required.
- Incident Investigation training to familiarize workers with the general principles of root cause incident investigations and the key aspects involved in completing this in consultation.

7.4 Work Safety Committee

All members of the project Work Safety Committee shall have appropriate training to allow them to fulfil their functions and duties under the Work Health & Safety Regulation. Construction Control has set the minimum training for all Work Safety Committee members:

- National Construction Induction (White Card); and
- Health Safety Representative or Work Safety Committee training

7.5 Industrial fall-arrest systems and devices (Harnesses / Fall-protection)

Based on workers involvement specific training is required to enable them to effectively conduct their role associated with working at heights and use of Industrial fall-arrest systems and devices. Training requirements have been divided into five broad target groups as per AS 1891.4:2009. Workers must provide CC evidence of the following competency-based training, depending on the target group they fall within. This is to be verified on the *Q030407 Fall-arrest Equipment Permit*.

Target Group	**Core training elements to be verified**
Height safety associated worker	Basic height safety theory for all workers associated with harness-based work at height.
Height safety operator	Training in skills needed to perform harness-based work at height under direct supervision of height safety supervisor
Height safety supervisor	Training and assessment in skills needed to perform harness-based work at height unsupervised, to supervise entry level and other operators; and to participate in first-aid responses rescue
Height safety equipment inspector	Training in the skills needed to detect faults in equipment and determine remedial action.
Height safety manager	Training for people involved in the selection, design, manufacturer or installation of height safety systems or equipment; the development of control measures or work practices; or the technical skills appropriate to tasks and appropriate risk and systems management

8 Project Risk Management

All hazards identified by Construction Control are to be identified, assessed and controlled using the risk management process outlined within this section. The risk assessment process shall be documented in the Project Risk Register as part of the project's pre-commencement and ongoing quarterly review process

All relevant sections of the site-specific *Q030104 Project Risk Register* (PRR) are required to be incorporated into applicable risk assessments, procedures and SWMS developed for the project.

The PMP and PRR will be developed to be site-specific for the scope of works and shall be re-reviewed whenever:

- a review has not been undertaken in the previous 3 months.
- there are changes to legislation, standards or codes of practice that affect the PMP.
- a significant incident occurs; or
- a significant non-conformance is identified.

8.1 Risk Management

The *S030106 Risk Assessment* form is to be used to assess risk on site.

The following procedures are to be followed when identifying any HSEQ hazards, assessing associated risks and implementing suitable risk control measures. All steps of the risk assessment must be done in consultation with available stakeholders and take into consideration current legislation, previous incidents, recent alerts and other guidance information. This process is used to mitigate the risk of injury, illness or dangerous occurrence resulting from work activities.

STEP 1. Establish the Context.

STEP 2. Hazard Identification and analysis of associated risks. List work activities in a sequential order and record the hazards and associated risks connected to the tasks.

STEP 3. Risk Assessment. Determine the Likelihood and Consequence of the risk. Use the Construction Control Risk Matrix to calculate the severity and risk of an event occurring.

STEP 4. Risk treatment. Develop control measures using the 'hierarchy of controls' to reduce the risk 'so far as reasonably practicable' using a combination of risk treatment options. The control measures listed must be in priority as per the 'Hierarchy of Controls'.

STEP 5. Calculate the Residual Risk Score. Assuming the controls have been determined and correctly implemented as per Step 4, re-assess the level of risk using the Risk Matrix and to allocate a Risk Ranking in accordance Step 3.

STEP 6. Monitor and Review risk treatment controls and whole risk management process through inspection and test plans.

Where the Residual Risk Score is ranked as 'high' or 'severe' work cannot proceed. CC Site Management must re-assess hazard control measures and risk ratings. Additional control measures must be established to reduce the risk to ensure so far as is reasonably practicable before work can commence or continue.

Construction Control's Risk Matrix

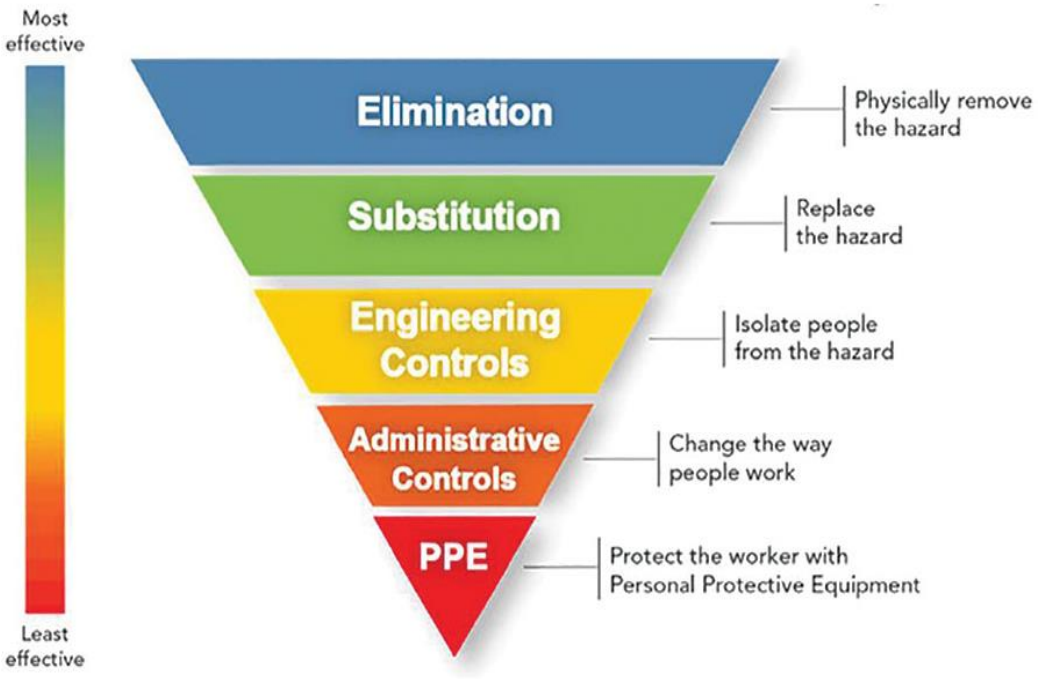
A		*Qualitative Scale*	*Quantitative Scale*
	Extreme	Fatality, significant disability, catastrophic property damage	$50,000□
	High	Minor amputation, minor permanent disability, moderate property damage	$15,000□$50,000
	Medium	Minor injury resulting in an Loss Time Injury or Medically Treated Injury	$1,000□$15,000
	Low	First Aid Treatment with no lost time.	$0□$1,000

B		*Magnitude Scale*	*Probability Scale*
	Likely	Monthly in the industry	Good chance
	Possible	Yearly in the industry	Even chance
	Unlikely	Every 10 years in the industry	Low chance
	Very Rarely	Once in a lifetime in the industry	Practically no chance

C		Likely	Possible	Unlikely	Very Rare
	Extreme	16	14	11	7
	High	15	12	8	4
	Medium	13	9	5	2
	Low	10	6	3	1

D	Score	Ranking	Action
	14 - 16	Severe (S)	Action Immediately
	11 - 13	High (H)	Action with 24 hrs.
	7 – 10	Medium (M)	Action within 48 hrs.
	1 – 6	Low (L)	Action within 5 working days.

Construction Control's Hierarchy of Controls



Refer to *BMS Procedure 3.01 Risk Management* for further guidance.

8.2 Design Assessment

At the commencement of a project, the design must be assessed in accordance with the *Code of Practice Safe Design of Structures.* This requires Construction Control to obtain or conduct an assessment of the building design features to identify, assess and control the issues relating to the buildability across the project. This must be done in accordance with procedure *9.01 Design Risk Management*.

The *Q090102 Design Risk Analysis* shall be completed by CC Site Management in consultation with appropriate parties. The hazards identified that could not be eliminated are to be incorporated into the PMP.

The *Q090103 Risk Profile Review* shall be completed by Site Management to assess requested design changes to "For Construction" drawings for impacts on HSEQ.

8.3 Project Risk Assessment

Before starting construction, the Project Manager and relevant project team members shall complete the *S070301 Project Pre-commencement Review*.

The Project Manager and relevant project team members shall then prepare the site-specific *S070305 Project Management Plan, S030104 Project Risk Register*, *S070307 Project Responsibilities Matrix* and *S070603 Project Emergency Plan.*

Once Implemented the Project Management Plan, Project Risk Register, Project Responsibilities Matrix and Project Emergency Plan will be reviewed in accordance with the quarterly review process. The quarterly reviews are aligned with set quarterly CC BMS updates of these key document.

The HSEQ Manager and CC BMS Control Group develop and review all CC BMS documents on a regular basis, taking into consideration applicable Acts, Regulations, Codes and Standards; along with available information on the hazard including records of incidents, illness and disease. Any project specific changes to template documents need to ensure that all legal and company requirements are maintained.

8.4 Latent Conditions

The *Q070407 Latent Conditions Checklist* is designed as a cover sheet which collects documentation regarding latent conditions and identifies and manages risks prior to works commencing.

The completed *Q070407 Latent Conditions Checklist* is to be uploaded to the Construction Control Project Document Register in Simpel. This step is to occur before any tenders are issued for works that have potential latent conditions in the scope (e.g., earthworks, fit-out, remediation, electrical, hydraulic etc.).

This checklist is to be completed at the start of a new project/stage. The types of investigation in the *Q070407 Latent Conditions Checklist* are as follows:

Dilapidation Report records existing conditions of the building and/or tenancy, including internal fit-outs, external pavement and green areas. The *Q070408 Dilapidation Report* is to be used to complete this section.

Geotechnical Engineer Report identifies existing ground conditions and geotechnical challenges and hazards.

Structural Inspection Report assesses existing structures that are to be retained. To be completed by a qualified Structural Engineer.

Hazardous Substances Survey/Report, which may be provided by the client, communicates any existing risks in relation to chemicals and/or dangerous substances located in the soil or existing buildings prior to taking possession of the site.

Heritage and Environmental Aspects, to collect all relevant stakeholder documents e.g., council reports, tree protection plans, EPA reports and investigation for possible 'Unexpected finds.'

Existing Records As-built drawings and/or previous survey to be obtained and attached.

DBYD, Client and Combined Utilities Drawings using the *Q070406 Pre-excavation Documentation* form to collect and review all drawings relating to the location of existing services.

8.5 Vulnerable Workers

Construction Control recognises that vulnerable workers attend our sites on a regular basis and are committed to ensuring that all workers, especially vulnerable workers, are catered for on our sites.

Construction Control defines vulnerable workers as:

- Apprentices and Trainees
- A worker with less than six months experience in the industry
- A worker under twenty
- A worker over sixty
- A non-English speaking worker

Construction Control has implemented a series of measures to support vulnerable workers attending our sites. These measures include:

- Discovering the potential for vulnerable workers with each Sub-contractor during our tendering process and reminding them of their requirement to provide training, supervision, and support to all workers, especially Vulnerable Workers.
- Checking that relevant documentation is in place to support and assist the vulnerable worker, including additional supervision, adequate training and the translation of SWMS and Inductions.
- Identifying vulnerable workers in our project induction.
- Implementing a Construction Control 'buddy' system for vulnerable workers at induction, where vulnerable workers are given the contact details of Construction Control's site team and the vulnerable worker is encouraged to make confidential contact with a staff member regarding any questions or concerns.
- Monitoring that our Sub-contractors have adequate supervision in place for vulnerable workers.

Construction Control understands that vulnerable workers are at a greater risk on construction sites and have implemented a dedicated *Q010123 Vulnerable Worker Policy* to provide better support and encouragement to this group.

8.6 Non-English-Speaking Workers

All contractors that have under their supervision, limited or non-speaking English workers are required to comply with Work Safety Regulation 2011, Division 3.2.1.

Contractors must ensure Non English-Speaking workers have a SWMS that is written in their language, so it is understood and mirrors the English written SWMS from the contractor covering scope of works.

All SWMS' that have been translated into another language must have evidence of a Nationally Accredited Translating firm to guarantee the translation reflects the message conveyed by the English written SWMS.

Contractors with on-site workers with possible language difficulties must have an English-speaking interpreter on-site at all times. The interpreter is to be present at the induction stage and at all times after this process, to remain within 'eyesight' of the workers to ensure that all communication and correspondence from others is communicated and that the workers' health and safety, and that of all other workers working in the area, is of the highest standard.

8.7 Sub-Contractor Management

8.7.1 General Sub-Contractor Coordination

Construction Control's project specific *S070302 Project Management Plan*, *S030104 Project Risk Register*, *S070603 Project Emergency Plan and S070307 Project Responsibilities Matrix* are the key HSEQ documents to be used by Construction Control and all Sub-Contractors on site. This direction ensures clear communication and understanding regarding HSEQ coordination and management.

Construction Control encourages all parties on site to work together to achieve the best HSEQ outcomes for the project.

8.7.2 Minor Works

Minor Works are packages under $250,000 and the scope of works does not include any High-Risk Construction Works.

8.7.3 Sub-Contractor Annual HSEQ Review

Construction Control's HSEQ Advisors will review the HSEQ controls for all Sub-Contractors on an annual basis using the *S070302 Sub-Contractor Annual HSEQ Review*. This review will ensure the Sub-Contractors HSEQ controls are in line with the CC BMS.

The completed reviews and all associated documentation will be saved in the Head Office Simpel project and list of compliant and reviewed Sub-contractors maintained in the *Q210102 Sub Contractor Annual HSEQ Review Register*.

8.7.4 Sub-Contractor Project Specific HSEQ Review

Prior to a Sub-contractor commencing on site, the Construction Control staff member responsible for the trade package is to complete a *S070303 Sub-Contractor Project Specific HSEQ Review* in Simpel. This form prompts the reviewer to check if the *S070302 Sub-Contractor Annual HSEQ Review* has been completed in the last twelve months (As per 13.5.3).

If there is a current *S070302 Sub-Contractor Annual HSEQ Review* in place, the reviewer will be prompted by the *S070303 Sub-Contractor Project Specific HSEQ Review* to ensure that the Sub-contractors HSEQ documentation covers the project scope and addresses any project specific changes to the *S030104 Project Risk Register.*

If there is not a current *S070302 Sub-Contractor Annual HSEQ Review* in place, the reviewer will be prompted by the *S070303 Sub-Contractor Project Specific HSEQ Review* to inform the relevant HSEQ Advisor that the *S070302 Sub-Contractor Annual HSEQ Review* is required to be completed. The reviewer can use the *S070303 Sub-Contractor Project Specific HSEQ Review* to check that the Sub-contractors HSEQ documentation is applicable the project scope and addresses the *S030104 Project Risk Register* requirements before seeking a Conditional Start endorsed by the Project Manager. A *S070302 Sub-Contractor Annual HSEQ Review* should be completed within one month of a Conditional Start being authorised.

The Contractor must nominate a Works Supervisor who is required to conduct ongoing monitoring of the implementation and effectiveness of the Sub-Contractors HSEQ system. Where the work activity changes or is directly impacted by changing conditions onsite the matter is to be escalated to the Project Manager and a solution discussed with all parties to ensure the risks associated are adequately controlled and the HSEQ documentation updated as appropriate.

The Project Team will conduct ongoing *S030413 Work Activity Observations* as required by the Project Management Plan.

Additionally, works involving the use of hazardous substances will require a Hazardous Substance Risk Assessment to be provided.

Refer to the following sections for further guidance:

- S19 (Hazardous Substances management)
- S21.2 (Work Activity Observations)
- Procedure 8.02 Calling Tenders and Letting Sub-Contracts

8.7.5 Significant Works Packages

The Project Manager is to determine any Significant Works Packages in consultation with the HSEQ Manager and Project Director.

Significant Works Packages may be because the Sub-Contractor takes possession of the full (or section of) site e.g., during demolition or a sub-contracted residential builder completing a portion of a project.

Contractors engaged for a Significant Works Package must provide a *Management Plan* to the Project Manager. The plan will be reviewed using *S070306 Contractor Plan Review* prior to works commencing.

8.8 High Risk Construction Activities [Tasks that require a SWMS]

Prior to commencing a specific activity onsite, a specific Safe Work Method Statement (SWMS) for the task which manages specifically the applicable high-risk construction activities must be:

- Submitted to Construction Control Site Management for review against the criteria on the *S070302 Sub-Contractor Annual HSEQ Review* and the *S070303 Sub-Contractor Project Specific HSEQ Review.*

8.8.1 Construction Work

'Construction work' includes any work carried out in connection with the construction, alteration, conversion, fitting out, commissioning, renovation, repair, maintenance, refurbishment, demolition, decommissioning or dismantling of a structure, which includes the following:

- any installation or testing carried out in connection with construction work; or
- the removal from the workplace of any product or waste resulting from demolition; or
- the prefabrication or testing of elements, at a place specifically established for the construction work, for use in construction work; or
- the assembly or the disassembly of prefabricated elements to form a structure,
- the installation, testing or maintenance of an essential service in relation to a structure; or
- any work connected with an excavation; or
- any work connected with any preparatory work or site preparation (including landscaping as part of site preparation) carried out in connection with an activity referred to as construction work.

8.8.2 Exclusions

Construction work does not include:

- the prefabrication of elements, other than at a place specifically established for the construction work, for use in construction work.
- the construction or assembly of a structure that, once constructed or assembled, is intended to be transported to another place; or
- testing, maintenance or repair work of a minor nature carried out in connection with a structure.

8.8.3 High Risk Construction Work

High Risk Construction Work includes:

- at heights of more than two meters
- demolition
- removal or disturbance of asbestos
- temporary supports for structural alterations
- powered mobile plant
- explosives
- confined spaces
- tilt-up or precast concrete
- work that is in, on or near electrical installations or service
- excavation of trenches or shafts deeper than 1.5 metres
- roads or railways in use by traffic
- water/liquids that pose a drowning risk
- pressurised gas distribution mains or piping
- artificial temperature extremes
- contaminated or flammable atmospheres
- chemical, fuel or refrigerant lines

8.9 Project Procurement

8.9.1 Subcontractor/Consultant Engagement

All potential subcontractors and consultants will be engaged in line with Procedure *8.02 Calling Tenders and Letting Subcontracts.*

The Tender Assessment and Selection Criteria Section of the *Q060202 Tender Form* requests relevant documentation and evidence from tenderers is provided to Construction Control. Once the tender has closed Construction Control will complete a detailed procurement assessment using the *Q080203 Tender Evaluation Matrix.*

A *Q080204 Tender Interview Record* is to be completed with two Construction Control staff present. At a minimum, a *Q080204 Tender Interview Record* is to be completed for the best placed tenderer. A *Q080204 Tender Interview Record* must be completed with a successful tenderer prior to the contract being awarded to them.

All subcontractors must also:

- Submit current Certificates of Currency for Workers Compensation, Public Liability and Professional Indemnity as required by the Subcontract Agreement.
- Submit records for any consultative meetings held on site by the Subcontractor.
- Participate in site safety meetings, safety walks and construction coordination meetings as communicated by the Project Manager.

8.9.2 Purchase/Hire of Goods, Equipment and Minor Services

Prior to purchasing and/or hire the Project Manager shall ensure that risks associated with the purchase or hire of any goods, equipment and minor services (labour hire arrangements) have been identified and control measures established as appropriate with regard to HSEQ using *S080302 Acquisition Assessment Goods or S080303 Acquisition Assessment Plant*.

8.10 Change Management

All changes relating to the project which require assessment and control must be managed by the Project Manager using the *Q050202 Change Management Record*. Changes could include:

- changes to design which may affect safety.
- changes as a result of a BMS Alert.
- changes to the *Q030104 Project Risk Register* or *Q070603 Project Emergency Plan* as a result of a CAR or deficiency identified at inspection, audit, hazard or observation.
- changes to the PRR, or PEP as a result of accepted recommendations from the Work Safety Representative or Committee.
- changes to site conditions relating to reviews / work method changes; or
- changes to the PRR, or PEP as a result of changes to project conditions.

The Change Management Record will ensure all changes include the following:

- assess the impact on work procedures or level of risk assigned to work activities.
- ensure completion and acceptance of required changes to the PRR, or PEP and / or the associated SWMS and WHS, Quality Assurance and/or Environmental documents; and
- communication to and acceptance of changes by all relevant parties.

8.11 Falls

All work at height shall be managed as per Part 4.4 of the Work Health and Safety Regulations 2011; requiring all contractors and CC to manage risk of falls:

(a) in or on an elevated workplace from which a person could fall; or

(b) in the vicinity of an opening through which a person could fall; or

(c) in the vicinity of an edge over which a person could fall; or
(d) on a surface through which a person could fall; or
(e) in any other place from which a person could fall.

As far as reasonably practical work is to be carried out on the ground or on a solid construction. Where work on the ground is not practical and the risk of falls cannot be eliminated the hierarchy of controls must be implemented to develop suitable risk treatment options and minimise the risk of fall.

When developing a safe system of work CC and Sub-contractors can manage risk of falls by:

(a) providing a fall prevention device such as a secure fence; edge protection; working platforms; or cover if it is reasonably practicable to do so; or
(b) if it is not reasonably practicable, provide a work positioning system; or
(c) if it is not reasonably practicable to comply with either paragraph (a) or (b), provide a fall arrest system, so far as is reasonably practicable.

Construction Control encourages all personnel working at height to have a 'Safe Work at Height' training course complete and evidence of competency available. Where a worker is identified as not working in accordance with work at height procedures within SWMS CC may request worker recomplete training.

Construction Control regularly monitors for areas where there is a risk of a person falling.

8.12 Demolition

All demolition works shall be planned for to ensure the sequence and work methods are controlled. Written notice to WorkCover/WorkSafe shall be complete by the 'principal contractor' at least (5) days prior to:

- Demolition of a structure, or part of a structure that is load bearing or otherwise related to the physical integrity of the structure, which is at least 6 meters in height;
- Demolition work involving load shifting machinery on a suspended floor, or
- Demolition involving explosives.

Construction Control shall ensure prior to making alterations or construction of temporary structures an assessment of structures/materials/foundations is complete and the following items are documented, as a minimum, by a competent person into a Demolition Work Plan:

- The details of the company conducting the demolition, including the Demolition License, the approval from the local government and the physical site location.
- An investigation of the site including:
  - The type of construction of the structure to be demolished.
  - The type, location, extent and status of any underground services or pipework.
  - The location of any underground structures such as basements or tanks.
  - The location & type of any retaining structures that support adjoining structures/ ground.
  - The type of materials e.g., hazardous substances or dangerous goods;
  - The type and location of any above ground or building services;
  - The general condition of the building and site where the demolition will occur;
  - Identification of the isolation points for all services;
  - Identification of all services that remain 'live';
  - A brief description of the method of demolition including
    - the demolition sequence,
    - expected time for completion,
    - loading on floors,
    - means of temporary support,
    - type of equipment to be used and the means of moving from floor to floor;
  - Specific documentation of public protection, falling materials, fencing and hoarding requirements;
  - The location of 'WARNING - DEMOLITION IN PROGRESS' signage;
  - A noise management plan for the project taking into consideration:
    - AS 2436-2010 Guide to Noise Control on Construction, Maintenance and Demolition Sites;

- AS 1055.1-1997 Acoustics – Description and measurement of environmental noise; and
- AS 1055.2-1997 Acoustics – Description and measurement of environmental noise –

- A traffic management plan for the structure and for the site; and
- An environmental management plan for the site and the materials.

8.13 Excavations & Trenches

Prior to commencing works on a project that has any excavation component a *Q0304023 Pre-Excavation Documentation* form is to be completed. This form is intended to be the cover page to the DBYD, design drawings relevant to inground services and client inground service drawings. All these documents are to be combined to form the project specific *Q070406 Pre-Excavation Documentation*. The completed *Q0304023a Pre-Excavation Documentation* form, with all drawings attached, is to be saved in Simpel, under CC Project Management Documents and is to be attached to all tenders that may include any excavation. The *S070802 Feb, May, Aug, Nov Project Quarterly Review* prompts the *Q070406 Pre-Excavation Documentation* to be reviewed and updated through the life of the project.

All excavation and trenching works shall be planned to ensure the sequence and work methods are controlled using the *S030425 Excavation Permit*.

Q180112 Project Simpel - How To Guide 12 - Excavation Permits and *Q180113 Project Simpel - How To Guide 13 - Excavation Permit Completion* are available in Folder 18 of the CC BMS.

All excavation works shall be in line with the SWMS, the Excavation Work: Code of Practice, Dial before you Dig specifications, and Client services diagrams.

Works undertaken within 5 metres of an Electrical Utilities (including Evo Energy) assets, must meet the requirements of Electrical Safety Rules as outlined in the Blue Ticket training. Construction Control maintains copies of the relevant documentation in the CC BMS Folder 20.0 Item O. Electrical Safety Rules.

Construction Control shall ensure all people working within trenches and excavations have signed appropriate SWMS, which detail area-specific incident recovery processes developed in consultation, as evidence of adequate training and instruction. This shall be verified during the initial review of the SWMS and during excavation / trenching inspections.

All excavations shall have appropriate benching, battering or shoring as per the Excavation Code of Practice or geotechnical report which states other control measures for a specific excavation.

Where a geotechnical report is used as the sole control measure for excavation / trenching works the engineer's competency shall be verified and recorded. Geotechnical reports must be detailed and comprehensive including photos, sketches and drawings as appropriate.

Where shoring systems or other documented methods are utilised, CC shall ensure they are:

- designed by a qualified engineer;
- detailed on up-to-date drawings/plans;
- installed by qualified persons and verified as correctly installed prior to use in accordance with the drawing/plan; and
- authorised and signed off by a qualified engineer following changes to the design or installed system.

Excavations shall be monitored by the Construction Control Site Manager using the Q030417 Excavation & Trenching Checklist:

- Daily where works are being performed; or
- Weekly for excavations or trenches that have no current works and are left open or after extreme rains or earth movement (I.e., earthquake)

8.14 Concrete Cutting / Coring

Prior to any concrete cutting or coring operations, a *S030427 Concrete Coring Cutting Permit* must be completed to ensure all associated risks with the concrete cutting / coring has been identified and controlled, including risks associated with isolation of the works, suspended slabs and services.

The completed permit must be readily available, via access to Simpel or a printed copy of the completed permit to verify that key safety, environment and quality assurance aspects are implemented.

8.15 Asbestos Removal

Prior to any removal of asbestos containing material, a Q030429 Asbestos Permit must be completed and approved by CC Site Management. This permit is to ensure all associated risks with ACM removal have been identified and controlled to a practical level.

Key processes in the identification and removal of ACM are:

- Licenced asbestos assessor to complete inspection and assessment
- Ensuring an asbestos removalist supervisor is present when the removal work is being carried out
- Providing appropriate training and ensuring the asbestos removal worker has undertaken the relevant units of competencies associated with the asbestos removal
- Telling various parties about the asbestos removal and providing them with appropriate information
- Asbestos removal control plan shall be developed by qualified asbestos removalist
- Notifying the regulator about the work before it starts
- Emergency plan shall be documented within the asbestos management plan
- Displaying signs and labels in the asbestos work area
- Limiting access to the asbestos work area
- Ensuring appropriate decontamination facilities are in place
- Ensuring waste containment and disposal procedures are in place
- Ensuring clearance inspections are conducted and issuing clearance certificates; and
- Ensuring air monitoring is conducted, where appropriate

8.16 Confined Spaces

A confined space on Construction Control sites; means an enclosed, or partly enclosed, space in the workplace that –

a) Is not designed as, or intended to be, a workplace; and
b) Is at atmospheric pressure while people are in it; and
c) May have –
    i) an atmosphere with potentially harmful contaminants; or
    ii) an unsafe oxygen level; or
    iii) stored substances that may cause engulfment; and
    iv) may have restricted entry and exit.

All work associated with confined spaces shall be planned for to ensure the sequence and work methods are controlled in accordance with AS 2685.

Planning must take in consideration the following as a minimum to manage and control confine spaces:

- Accountabilities and Responsibilities;
- Design, Manufacture, Supply and Modifications;
- Consultation Requirements;
- Training and Competency;
- Risk Management;
- Atmospheric testing and monitoring;
- Confined Space Emergencies;
- Documentation Requirements.

Confined spaces must be identified in the Project Emergency Plan, SWMS, safety meetings, project inspections and where identified a Risk Assessment shall be complete by appropriately trained personnel.

A Confined Space Permit must be established by the contractor; that is reviewed by appropriately trained Construction Control representative at the planning stage. Construction Control will monitor confined space activities in-line with the developed control systems.

Appropriate Emergency Equipment must be available with suitably trained personnel in line with the *Q030409 Inspection / Competency Matrix.*

Where a confined space has contaminants or unsafe oxygen levels, appropriate atmospheric testing and monitoring shall be carried out.

All Workers entering the confined space, stand-by personnel and supervisors are to have completed appropriate training including;

- the hazards of confined spaces; and
- risk assessment procedures; and
- risk management steps; and
- emergency procedures; and
- selection, use, fitting and maintenance of safety equipment.

Works Supervisor and/or standby person must provide CC with a record of current training for all workers.

8.17 Hot Works

Any activity which results in sparks, fire, molten slag or hot material which has the potential to cause a fire or explosion will require a *S030408 Hot Work Permit* to be in place prior to the works commencing.

Activities requiring a permit may include:

- Cutting;
- Brazing;
- Soldering;
- Thawing pipes;
- Oxy
- Welding
- Grinding (under nominated circumstances)

A *S030408 Hot Work Permit* may only be raised for a specific work activity and closed upon the completion of that activity. In the event works are to recommence after the closing of the permit a new permit will be required.

Permits must take into account potential changes to the immediate area with an agreed process established to ensure all necessary controls are in place prior to the works occurring each day for the length of the permit.

8.18 Lone Working

Lone working is to be avoided whenever possible. If lone working is required, the responsible supervisor must complete a Risk Assessment applicable to the task. Suitable controls may include radio contact, mobile phone check ins, regular physical checks, or coordination of other tasks to ensure additional persons are in the area.

9 Emergency Preparedness

Construction Control site management shall establish a *Q070603 Project Emergency* (PEP) prior to commencing works on site and communicate key areas at the site induction. Potential emergencies applicable to the project shall be identified and assessed within the projects Emergency Arrangements section of the *Q030104 Project Risk Register*, with significant risks included into the PEP. Communication of site-specific emergency scenarios and response requirements defined in the PRR and PEP shall be communicated to applicable workers via SWMS.

Project emergency preparedness shall be complete in accordance with Procedure 7.06 – Emergency Preparedness with a site-specific *Q070603 Project Emergency Plan* established and maintained by a competent Emergency Controller.

All designated emergency personnel forming the Emergency Response Team (ERT) shall have been inducted into the PEP's site-specific emergency procedures/plans by the Emergency Controller (EC). The Project Managers shall ensure the EC and ERT have obtained appropriate training and competency as per the *Q140605 Training and Competency Matrix* prior to development and/or review of the site-specific PEP or emergency procedures within.

The PEP, Appendix K must be complete by an appropriately training / competent EC to identify and assess site emergency equipment and requirements. This assessment shall be reviewed quarterly to ensure that the

right equipment is located on site to cater for the identified emergencies that may occur on the project and shall take into consideration quantities, size and the placement of equipment.

The *Q070603 Project Emergency Plan* shall be reviewed and evaluated whenever there is a serious emergency / incident and a part of the *S070801 Jan, April, July, Oct Project Quarterly Review*.

Emergency Drills shall be completed on 'High Risk Activities' and identified 'Emergency Arrangements' within the *Q030104 Project Risk Register* on a half yearly minimum basis and scheduled to be complete within the first three months and six months thereafter with an appropriate debrief as per Procedure 7.06. Any corrective actions identified during debrief which are expected to take more than 24hrs to action shall be transferred to a formal Corrective Action Request (CAR) as per Procedure 4.02.

Drills shall be completed on both Environmental and WHS aspects and scheduled using the *S070301 Project Pre-commencement Review*.

9.1 Emergency Inspections

The Project emergency equipment (e.g., fire extinguishers, exit lighting, access gates) and all emergency pathways must be inspected during the weekly *S030402 Project Inspection Record*.

Temporary Emergency and Exit lighting is to be hard wired (including illuminated 'running man' exit lights) and tested for 90 minutes by a qualified person every six months (as per AS 2293) to ensure it is in working condition.

Fire extinguishers must be tested by a competent external agency 6 monthly. Results of these must be retained in the project filing system. Fire extinguishers will be checked during the S030402 Project Inspections.

The First Aid requirements will be reviewed during the project inspection to ensure they are stocked, in date, adequate and accessible.

Refer to the Q030409 Inspection Matrix for all inspection and test requirements for all emergency equipment to be used on site.

9.2 Worker Accountability

All Construction Control projects shall keep a record of worker numbers for both reporting and emergency purposes so in the event of an evacuation all workers can be accounted for. This record must be maintained by the projects Emergency Controller.

Contractors must provide Construction Control a record of and maintain for the duration of their scope of works on the project the following:

- Site-specific work procedures covering contracted scope of works which must meet all requirements of the CC BMS.
- Weekly Toolbox Talk meetings;
- Appropriate Inspection and Test Plans (ITPs) and Registers;
- Records of training necessary to ensure the safe conduct of work;
- Lost time injury, medical treatment or near miss reports including injury management/rehabilitation details, alternative duties and incident investigation;
- Appropriate Work Safety Committee Representative upon request; and
- Record of on-site workers and labour hours upon request.

9.3 Electrical Emergency

Construction Control shall require all electricians completing live low voltage switchboard work and/or high-risk testing / fault finding to have available in the immediate area and documented in the contractors SWMS a Low Voltage Rescue Kit and competent 'Safety Observer' trained in its use.

Low Voltage Rescue Kits must consist of:

- Weatherproof bag, orange high visibility, synthetic non-tear material with unique Emergency "Glow in The Dark" Strip, carry strap

- Rescue crook, double insulated fiberglass 25mm and tested to withstand 5kV between the handle and hook
- Insulated gloves, size 11, 1000V (AS/NZS 2225)
- Emergency isolation sign 260 x 175mm
- Fire Blankets 1800 x 1200mm (AS/NZS 3504)
- “Isolate Here in Emergency” sign,
- Torch LED dolphin non-conductive 2x D size batteries
- Multi trauma dressing EO sterilized
- Thermal accident shock blanket
- CPR face mask (CE Approved); and
- List of contents and conformity card.

Low Voltage Rescue Kits must be fully inspected, and items are to be tested in accordance with manufacturer requirements on at least six-monthly intervals.

“Isolate Here in Emergency” signs are to be approximately 250mm x 150mm with ‘Isolate Here in Emergency’ printed in red in writing at least 40mm high. The signs are to be durable and lettering is to be permanent.

Items that are defective, faulty or out of date are to be immediately removed, replaced by a compliant item, and tagged out of service until repaired and/or tested by a competent person

10 Site Safety

10.1 Site Rules

Site Rules will be prepared and documented using *Q030108 Site Rules* and reviewed regularly by the project team throughout the course of the project to ensure their effectiveness and relevance.

10.2 Smoking

All Construction Control projects shall ensure there is no smoking or vaping in enclosed work areas or within 10m of amenity areas.

Construction Control is moving toward a smoke-free workplace and shall implement a smoke-free policy across all Construction Control projects in consultation with workers during construction to demonstrate reasonable commitment and compliance with the Work Safety Act.

10.3 Disciplinary Action

Disciplinary action will be taken should any person / company fail to follow or contravene:

- the Site Rules;
- any lawful instruction by a Construction Control representative;
- associated SWMS/JSA for activities undertaken; or
- applicable legislative requirements.

The disciplinary procedure includes the following three stages:

1. A verbal warning issued on site and recorded in the site diary and / or by sending an email to the supervisor of the person / company in concern.
2. A written warning will be issued to the person / company concerned and their immediate supervisor using a Corrective Action Request. This will result in stand down of the person concerned for the remainder of the day in which the warning is issued.
3. If a written warning has been issued to a person / company and the same person / company contravenes the safety requirements again, they may be dismissed from the project. This will be at the discretion of the Project Manager.

For serious breaches of safety, persons / company concerned may be instantly dismissed from the project. Serious breaches include, but are not limited to, any of the following:

- Tampering with the WH&S, Environmental and Quality Assurance equipment such as handrails, guardrails, barricades, fire extinguishers, emergency equipment etc.;
- Urinating anywhere other than in designated toilets;
- Tampering with electrical power boards or supply cabling without authorisation;
- Theft;
- Any act of intentional gross misconduct;
- Violence or harassment;
- Racial vilification; and
- Being under the influence of alcohol or illicit drugs.

11 Dispute Resolution

If an onsite dispute is not able to be resolved between affected parties, the Project Manager will use Procedure 4.02 Non-conformance Management to ensure the dispute is effectively managed. All workers must raise disputes with the Site Manager in the first instance, and then with the Project Manager.

At no time will disputes be extended to involve external parties without the permission of both parties involved in the dispute.

A copy of the Dispute Resolution Procedure is included at the bottom of the Q030108 Site Rules document, that is displayed on the project notice board.

Associated Corporate Procedure: 4.02 –Non-conformance Management

12 Site Induction

12.1.1 Site Induction Requirements

All workers entering the project must take part in the project induction. The induction is used to communicate the specific project requirements to all workers. Workers should be tested to ensure they understand English, or an interpreter may be required. At the end of each site induction there will be a short competency assessment to verify key aspects are understood.

Construction Control shall review the site induction on a minimum quarterly basis to ensure it remains a site-specific document and during these reviews shall identify any trades requiring a re-induction into the site due to changing work environment.

The induction process is as follows:

1. Obtain proof that the inductee has completed a nationally recognised Construction Induction training course / general WH&S induction training for the construction industry;
2. Obtain proof that the inductee has completed a recognised Asbestos Awareness Course;
3. Obtain proof that any inductee working on building services has completed a recognised Working Safely with Asbestos Containing Materials Course;
4. Check that appropriate licences and competencies are attached;
5. Obtain proof that the inductees have been inducted into the hazards, risks, controls, and procedures within their SWMS / JSA;
6. Ensure the inductee has completed the Simpel Induction process.
7. Simpel maintains a project specific Induction Register.

12.2 Visitors

A visitor is a person who is authorised to be onsite but is not undertaking any construction works e.g. clients, consultants, auditors, WorkCover/WorkSafe Inspectors, or members of the public. Visitors must:

- report the Site Office;
- be entered into the Visitor Register;
- agree to adhere to the Site Rules;
- be shown and understand the Project Emergency Plan; and
- be escorted at all times by an inducted person.

12.3 Delivery Drivers

Inductions are mandatory for delivery drivers who are required to carry out tasks that may involve Construction Work. Examples include:

- Accessing areas exposed to a risk of fall;
- Slinging loads;
- loading and unloading delivery items using mobile plant (e.g. Hiab, forklift etc);
- activities conducted in conjunction with other mobile plant (e.g. concrete agitator drivers, precast deliveries etc).

Driver activities may inherently result in them being involved in or exposed to High Risk Construction Work activities which will require a SWMS to be in place prior to the works commencing. High Risk Construction Work may include but not limited to:

- Works involving a risk of fall from height greater than 2 meters
- Works involving tilt-up or precast concrete
- Works carried out in an area of a project where there is movement of powered mobile plant
- Works carried out in or near a shaft or trench deeper than 1.5m.

SWMS addressing the Driver's activities should be prepared by the supply company or the Delivery Driver may sign onto a Construction Control (or third party) SWMS that addresses their activities.

Additionally, project specific circumstances resulting in a Delivery Driver being required to traverse the site unescorted may also trigger the need for induction due to the potential they may be required to exit the vehicle and be directly exposed to High Risk Construction Work activities.

Construction Control has a Delivery Driver specific induction process in Simpel to induct Delivery Driver who regularly attend site. A back up paper based system is also maintained to manage unscheduled Delivery Drivers.

During the induction, the Drivers should be provided with site-specific documentation including, at minimum, a copy of the Site Rules and latest version of the Site Plan and Emergency Plan.

In the event these documents are updated the Project Manager will make every effort to ensure the revised version of the site-specific documents will be provided to the Delivery Company for distribution to all inducted Drivers.

13 Plant & Equipment

13.1 Introduction

In order to manage the inherent risks associated with plant and equipment on construction sites, the following section has been created to ensure plant is of a sound and acceptable condition; is being adequately maintained; and is monitored whilst it is on the project.

Purchase or hire of any major Plant and/or Equipment directly for Construction Control needs to be assessed using the item of *S080303 Acquisition Assessment Plant* and *S030411 Plant Operation Permits*.

Plant and equipment are generally divided between common plant which is lower risk and major plant which requires inspections, maintenance, and operator competency to be verified.

13.2 Plant Setup

The *Q070409 Designated Plant Setup Locations* form is designed as a cover sheet to consider project materials handling and collect documentation that identifies and manages risks of plant setup.

The completed *Q070409 Designated Plant Setup Locations* form is to be uploaded to the Construction Control Project Document Register in Simpel. This step is to occur before any tenders are issued for works that have potential plant requirements in the scope (e.g., cranage, concrete place, earthworks, trades organising deliveries to site etc.).

This checklist is to be completed at the start of a new project/stage. The types of investigation in the *Designated Plant Setup Locations* form are as follows:

- Site access
- Inground services
- Overhead obstacles
- Loading Bays & Delivery Areas
- Slew Crane / Tower Crane Lift Study
- Pick and Carry Crane Lift Study
- Concrete Pump Setup
- Geotechnical Engineer Report
- Designated Plant Setup Locations Drawing

13.3 Major Plant

Major plant requires a *S030411 Plant Operational Permit* to be completed prior to use to verify key aspects of plant and equipment deemed high risk. For all major plant, the following must be completed:

- A SWMS for the activity which incorporates the plant must be reviewed by CC;
- Records must be provided as per the requirements of the *S030104 Plant Operational Permit*; and
- A completed pre-operational, maintenance and inspection checklist applicable for that plant.

Major plant is considered as:

- Elevated Work Platforms (Scissor lift, boom lift etc)
- Mobile Cranes
- Tower Cranes
- Mobile Concrete Pumps
- Static / Tower Concrete Pumps
- Forklift / Telehandlers
- Powered mobile Earthmoving equipment
- Other large Plant

Large generators that can't be moved by hand are to be inducted using the *S030411i Other Powered Mobile Plant Operation Permit*.

Major Plant does not include small generators, hand tools or water pumps.

Major Plant requires a plant risk assessment that covers the operation of the item of plant and is generally provided by the manufacturer / designer / supplier / importer to manage risks to health and safety associated with the following:

- The plant overturning;
- Things falling on the operator of the plant;
- The operator being ejected from the plant;
- The plant colliding with any person or thing; and
- Mechanical failure of pressurised elements of plant that may release fluids that pose a risk to health and safety.

Competency and Inspection requirements are outlined in the *Q030409 Inspection and Competency Compliance Matrix* and detailed in the specific *S030411 Plant Operation Permits*.

Some plant machinery listed in Schedule 5, part 5.2 of the Regulation will need to have plant items and plant designs registered with WorkCover/WorkSafe. This includes tower cranes, lifts, concrete-placement units, escalators, building maintenance units and mobile cranes with a rated capacity of greater than 10t.

A specific pre-start maintenance and inspection checklist applicable for each major plant item must be complete by a competent person prior to operation. Pre-start checklists must be for the specific plant or developed by a competent person to cover maintenance and inspection requirements defined in the operator's manual.

The Simpel Plant Induction module records the project plant register and maintenance inspections.

Plant inductions ensure SWMS are reviewed and have a safe system of work described taking into account the manufacturers' operational requirements, issues identified in the plant risk assessment, and risks associated with the nature of the plant and its operation on the project.

The *S070802 Feb, May, Aug, Nov Project Quarterly Review* prompts the project to complete a full review of plant on site on a quarterly to review that all plant permits are current, and maintenance and inspections are complete and in compliance with manufacturers and legal requirements.

Any plant / equipment identified as not compliant, defective, not meeting requirements of any agreed programs shall be isolated and locked / tagged not for use. CC site management shall ensure non-compliant plant and/or equipment is removed from site.

Plant movement shall be managed via site-specific SWMS per contractor taking into account hazards and risks listed in the *Q030104 Project Risk Register*; and an internal traffic movement plan developed and maintained within the *Q070603 Project Emergency Plan*.

S030411 Plant Operational Permits verify that the plant has:

- OEM Manual, Plant Design Risk Assessment and appropriate SWMS;
- Appropriate warning devices (reverse alarms, quackers, beepers, flashing beacons);
- Appropriate communication devices (2-way radio, spotters where necessary);
- Evidence of a competent operator;
- Appropriate inspection and maintenance records; and
- Applicable Roll Over Protective Structure (ROPS) and/or Falling Object Protective Structure (FOPS) certified compliant to either:
    - I) AS 1636;
    - II) ISO 10262;
    - III) ISO 12117;
    - IV) ISO 12117-2;
    - V) ISO 8084;
    - VI) ISO 3449;
    - VII) ISO 3471 or otherwise assessed.

Site-specific emergency procedures to manage potential emergencies associated with plant and plant operation on the project shall be documented in the *Q070603 Project Emergency Plan* also.

13.4 Common Plant

Common plant is plant used by all personnel and workers on the project. All personnel and workers have a responsibility to monitor the condition of common plant and assure themselves that it is suitable for use. Faults in Common Plant should be reported immediately. Common plant includes; Perimeter Scaffolding, Man and Materials Hoist, and Formwork.

13.5 Elevated Work Platforms

The following must be completed for all EWP's (Scissor Lifts, Boom Lifts etc) prior to starting on the project:

- A SWMS must be developed by the company operating the plant and communicated to all relevant workers that ensures a safe system of work is in place to manage the plant, taking into account; maintenance, operator competence, ground conditions and consideration of workers on site.
- A *S030411a EWP Plant Operation Permit* must be completed by the CC staff member responsible for the works and the plant operator prior to use. This permit verifies the operator's competence and communicates specific hazards and control measures.

13.6 Mobile Cranes

Mobile Crane Operation must be as per the Mobile Crane Code of Practice.

The following must be completed prior to a mobile crane setting up on the project:

- A *Q070409 Designated Plant Setup Locations* form that is available to CC site staff and crane crews to consider prior to mobile crane use;

- A SWMS must be developed by the crane company and communicated to all relevant workers that ensures a safe system of work is in place to manage mobile cranes, taking into account ground conditions, development of lift plans and lifting of materials in consideration of workers.
- *S030411 Plant Induction Permit* that reviews cranes service, inspection, maintenance and lifting devices. Lifting devices must comply with the requirements in Section 13.14 of this PMP;
- On the first visit to site by a mobile crane a S030411b Crane Operation Permit or on any subsequent visits to site by that same crane a *S030404 Mobile Crane Setup Checklist,* completed by the CC staff member responsible for the works and the crane operator. This process verifies the operator's competence, reviews maintenance and communicates lift specific hazards and control measures.
- A lift study is to be completed by the crane crew or crane company for complex lift operations;
- Materials shall not be lifted over workers and/or sheds. The Dogman and site supervisors must coordinate works to prevent. Where impractical, appropriate hoarding must be implemented.
- The base of the crane should be isolated to at least 3m around the crane and where required, physical barricades implemented to avoid pedestrian access, including appropriate signage; and
- A daily plant preoperational checklist

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times.

13.7 Tower Cranes

Tower Crane operation must be as per the Tower Crane Code of Practice. The following must be completed for Tower Cranes on the project:

- A SWMS must be developed by the crane company and communicated to all relevant workers that ensures a safe system of work is in place to manage the erection, lifting and dismantle of the tower crane, taking into account plant maintenance and in consideration of workers on site.
- A *S030411c Tower Crane Operation Permit* must be initiated by the CC staff member responsible for the works and the crane company prior to the erection process. This will prompt the sequential steps listed in the *S030411c(i) Tower Crane Pre-Installation Checklist, S030411c(ii) Tower Crane Base Concrete Strength Results, S030411c(iii) Tower Crane Pre-operation Checklist* and *S030411d(iv) Tower Crane Dismantle Checklist* to be completed. These forms are available in the Inspection tab of the Tower Crane Plant Induction in Simpel.
- Engineering details and a handover certificate must be provided for the base and tower;
- Certification results must be provided for the lifting equipment, including the crane hook & block;
- A plant specific pre-start checklist is to be completed prior to operation.

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times.

13.8 Lifting Devices

Prior to the use of any lifting device with a major plant item, a lifting gear register is to be attached to the *S030411 Plant Induction* with the details of Non-Destructive Testing (NDT), inspection dates, certification results; including the crane hook, slings / chains, stands and any lifting attachments or lifting boxes/bags; completed by an independently accredited lifting gear inspection service (LEEA or equivalent).

In other circumstances, the SWMS applicable to the use of the lifting device, must include provisions for inspection and use of the device.

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times.

13.8.1 Lifting Device Inspections

Lifting devices shall be inspected prior to use by a competent person.

Inspections shall be undertaken in accordance with the following:

(a) Inspections shall be undertaken in an adequately lit location.

(b) The lifting device shall be cleaned before it is inspected.

(c) Any worn components shall be measured to determine the degree of wear, which shall not exceed that allowed. Wear may be tolerated until the thickness of any worn section has been reduced by 10% or other specified value of the nominal section in any plane

(d) All components shall be inspected for any signs of wear at their load-bearing or highly stressed points. Signs of wear include nicks, cracks, gouging, stretching or distortion.

Lifting devices shall be formally inspected at intervals specified by the manufacturer or, in its absence, at intervals specified by a competent person (commonly annually), taking due consideration of the working environment and the manner in which the lifting device is used. The inspection is to be completed by an independently accredited lifting gear inspection service (LEEA or equivalent) or a competent person trained by the manufacturer.

13.8.2 Defects requiring withdrawal from service for Repair or Test

If any of the following defects are visible, the lifting device shall be clearly marked to indicate rejection, withdrawn from service and referred to an independently accredited lifting gear inspection service (LEEA or equivalent) or Advanced Rigger for assessment for repair, Proof Load Testing or Non-Destructive Test (NDT) certification:

(a) Cuts, nicks, gouges, cracks, excessive corrosion, heat damage, bent or distorted components or any other defects.

(b) Signs of overloading, such as any visible deformation of components.

(c) Markings that have become detached or illegible. In such cases the lifting device may be returned to service after being assessed by a competent person that it—

(i) is in good condition; and

(ii) has been remarked following verification of its identity and capacity.

Prior to any repair work an independently accredited lifting gear inspection service (LEEA or equivalent) or an Advanced Rigger shall make an assessment and prepare a report on defects and damage requiring repair including:

(a) Details of how the incident happened or circumstances leading to the discovery of the defective parts.

(b) Nature and extent of the damage and defects.

(c) Proposed action based on the manufacturer's recommendations.

Following any repair work Lifting devices must have complete Proof Load Testing or Non-Destructive Examination or alternative verification as per AS 4991:2004.

13.8.3 Lifting Device Markings

Lifting devices shall be clearly marked with the following information, as appropriate:

(a) Identification of manufacturer (or authorized representative or importer).

(b) Model, where applicable.

(c) Identification number.

(d) Tare mass of equipment when it exceeds 50 kg.

(e) Working load limit/rated capacity in kilograms where less than 1 t, in tonnes where greater than 1 t. When the equipment can be used in several configurations, WLL/rated capacities for each configuration shall be indicated.

(f) The group classification, as defined in AS 1418.1, when greater than Class C3.

13.9 Concrete Pumps

Concrete Pumping Operation must be as per the Concrete Pumping Code of Practice.

The following must be completed for Concrete Pumps prior to starting on the project:

- A *Q070409 Designated Plant Setup Locations* form that is available to CC site staff and pump operators to consider prior to mobile concrete pump use;
- A SWMS must be developed by the pumping company and communicated to all relevant workers that ensures a safe system of work is in place to manage concrete pumps, taking into account plant maintenance, ground conditions and consideration of workers on site.
- On the first visit to site by a mobile concrete pump a S030411d Mobile Concrete Pump Operation Permit or on any subsequent visits to site by that same mobile pump a *S030404a Mobile Concrete Pump Setup Checklist,* completed by the CC staff member responsible for the works and the crane operator. This process verifies the operator's competence, reviews maintenance and communicates specific hazards and control measures.
- For tower / static concrete pumps a *S030411e Static Concrete Pump Operation Permit* must be completed by the CC staff member responsible for the works and the pump operator prior to use. This permit verifies the operator's competence and communicates lift specific hazards and control measures. A *S030411e(ii) Static Concrete Pump Jumping Checklist* is to be completed prior to jumping a static pump.
- Current monthly line thickness tests attached in Simpel; and
- A plant specific pre-start checklist is to be completed prior to operation.

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times.

13.10 Forklift / Telehandler

The following must be completed for all Forklifts or Telehandlers prior to starting on the project:

- A SWMS must be developed by the company operating the plant and communicated to all relevant workers that ensures a safe system of work is in place to manage the plant, taking into account; maintenance, operator competence, ground conditions and consideration of workers on site.
- A *S030411f Forklift / Telehandler Operation Permit* must be completed by the CC staff member responsible for the works and the plant operator prior to use. This permit verifies the operator's competence and communicates specific hazards and control measures.

13.11 Earthmoving Equipment

The following must be completed for all Earthmoving Equipment prior to starting on the project:

- A SWMS must be developed by the company operating the plant and communicated to all relevant workers that ensures a safe system of work is in place to manage the plant, taking into account; maintenance, operator competence, ground conditions and consideration of workers on site.
- A *S030411g Earthmoving / Civil Plant Operation Permit* must be completed by the CC staff member responsible for the works and the plant operator prior to use. This permit verifies the operator's competence and communicates specific hazards and control measures.
- A completed and current *S030425 Excavation Permit* that has considered the *S070407 Latent Conditions Checklist* and *S070409 Designated Plant Setup Locations*.

All earthmoving equipment must be fitted ROPS/FOPS (compliant with AS 1636, AS 2294.2, ISO 3471:2008, ISO 12117-2 or otherwise assessed), seat belt, reverse signal and flashing light which shall be verified at Plant Induction stage and monitored and reviewed by Site Manager during routine weekly S030402 Project Inspections.

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times;

13.12 Personnel and Material Hoists

Prior to installation of a Personnel or Material Hoist, the following must be completed:

- A SWMS must be developed by the hoist supply company and communicated to all relevant workers that ensures a safe system of work is in place to erect, dismantle and operate the hoist.
- *S030411h Hoist Operation Permit* that reviews hoist service, inspection and maintenance and verifies the operator's competence.
- Designers, manufacturers and/or suppliers' specifications must be provided;
- SWMS stating erection and dismantling processes must be reviewed by CC;
- A signoff must be provided by a Structural Engineer for the method of installation;
- Proof of competency of Intermediate Scaffolder or Intermediate Rigger;
- Upon installation a 'handover' certificate must be provided to certify compliance with AS 1418.1, AS1418.7 and the site-specific design.

Prior to first use, the following must be checked and recorded on the plant permit:

- Mesh or chain wire is installed around moving parts at a distance of 1m;
- All access gates and side panels are to have no gaps exceeding 50mm with areas to each side of the gates suitably fenced or scaffolded to prevent falls or falling objects;
- Suitable lighting is provided at access gates;
- Ties are installed at required floors / distances; and
- Competent persons are operating the hoist, with the hoist locked when a competent operator is not in the hoist to prevent inadvertent use.

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times.

13.13 Hiab / Truck mounted crane

The following must be completed for all Hiab / Truck mounted cranes prior to starting on the project:

- A SWMS must be developed by the company operating the plant and communicated to all relevant workers that ensures a safe system of work is in place to manage the plant, taking into account; maintenance, operator competence requirements, ground conditions and consideration of workers on site.
- A CC plant operation permit is not required where the vehicle is unloading from the truck to the ground in a designated loading/unloading area.
- If the Hiab / Truck mounted crane is being used to lift materials to an area other than the ground, or is setting up in a non designated loading/unloading area a *S030411b Mobile Crane Operation Permit* must be completed by the CC staff member responsible for the works and the plant operator prior to use. This permit verifies the operator's competence and communicates specific hazards and control measures.

The Delivery Driver requirements in section 12.3 of this plan are also applicable.

13.14 Electrical

13.14.1 Electrical Plant

Test and Tagging must to be carried out as per AS 3012, AS 3760, and the approved *Work Health and Safety Code of Practice for 'Managing Electrical Risks at the Workplace.'* for the following electrical items:

Electrical Leads – 3 Monthly	Temp Boards & Fixed RCD – 3 Monthly
Portable RCD – 1 Monthly	RCD - Push Button Monthly - Operating Time Trip-test – 3 Monthly
Hired Equipment – 1 Monthly	Office computers and equipment – 12 Monthly
Electrical Tools – 3 Monthly	Equipment in amenities and site sheds – 3 Monthly
Construction wiring – 6 Monthly	Any equipment back from maintenance – Immediate
IT and Kitchen Appliances in the Site Office and Lunchrooms – 5 yearly	

Construction Control will review Subcontractor Test and Tag procedures via the S070302 Subcontractor Annual HSEQ Review and monitor compliance with these requirements via weekly S030402 Project Inspection Records and S030413 Work Activity Observations.

All Construction Control equipment is to be tested in accordance with the table. Records of testing shall be uploaded on a quarterly basis via the *S030434 Construction Control Test and Tag Hardcopy Attachment form*.

All Construction Wiring must be marked to indicate “Live Power” and suitably protected from damage. This includes installing unbroken conduit for Construction Wiring under 2.4 m.

13.14.2 Temporary Electrical Switchboards

Temporary Electrical Switchboards are installed, maintained and inspected in accordance with the *Q030104 Project Risk Register* and AS 3012.

A Certificate of Electrical Safety is to be submitted to the relevant Authority for every Temporary Distribution Board and/or addition wiring (e.g. Access Lighting Circuit).

The project electrician is to apply for a *S080431 Temporary Switchboard Installation permit*, via Simpel, and obtain CC approval, prior to installing a temporary switchboard on the project.

The project electrician is to apply for a *S080432 Temporary Switchboard Operation permit*, via Simpel, and obtain CC approval, prior to switching on a new temporary switchboard for use on the project. The *S080432 Temporary Switchboard Operation permit* will track that the quarterly RCD testing and inspections are occurring as required.

13.14.3 Overhead Powerlines

All work near overhead powerlines requires the contractor to complete a site-specific Safe Work Method Statement and have control measures reviewed by CC. Control measures shall be strictly in accordance with the Safe Work Australia Code of Practice for Work near Overhead Powerlines.

Overhead powerlines shall be tiger-tailed to ensure clear identification and de-energized and grounded or other protective measures provided before work is started. Where work is proposed inside the relevant approach distances a site-specific risk assessment must be developed in consultation with a licenced electrician and reviewed by CC.

13.15 Ladders

Ladders should only be used as a means of access and egress.

The practice of working off step ladders or builder’s ladders shall be prevented wherever possible. Step ladders and builder’s ladders may only be worked from as a last resort and will require a *S030415 Step and Builder’s Ladder Permit*, approved by Construction Control. Works are to be in accordance with the WorkSafe/WorkCover Portable Ladders Guide and Industry Position Paper for ‘Working off Stepladders’.

These controls are not applicable to platform ladders.

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times.

13.16 Fall arrest equipment / Harnesses

Users of fall arrest equipment and all people undertaking tasks associated with harness-based work at height shall be trained and assessed in accordance with the *Q030409 Inspection / Compliance Matrix*.

The use of harnesses as a primary means of fall prevention will be a last resort. In the event there is no other means of fall prevention available, a *Q030407 Fall-Arrest Equipment Permit* must be completed and approved by the Project Manager. This will be completed prior to use and signed off at the end of the day when all persons are safely off the harness. Each Harness Permit is valid for one day.

A specific pre-start checklist is to be completed prior to use of fall-arrest equipment.

Where the *Q030104 Project Risk Register* indicates harnesses are applicable for scope of works a 'retrieval plan' must be identified as required and must be developed as per the Harness Permit. Use of harnesses within boom-lifts does not require a Harness Permit due to physical fall protection in place; however SWMS should detail a retrieval plan for the operator.

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times.

13.17 Formwork

The *S110810 Structure Sequence* is used to monitor, manage and collect documentation from Sub-contractors during the structural phase of each project. Before a section of deck is handed over for the use of other trades the Formwork company is to complete a *S030403a Partial Deck Handover*.

All Formwork is constructed in accordance with AS 3610 and the manufacturer's requirements. Formwork plans must be certified by a practicing Structural Engineer and copies of relevant qualification provided to Construction Control. Formwork shall also remain in place until such time as a Structural Engineer authorises the stripping process. Formwork plans for false-work or temporary supports, props or structures must detail the method for both erection and stripping.

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times;

13.17.1 Formwork Design Plan

The Formwork Design Plan must be in place and contain, as a minimum, the following:

- Plans, elevations and sections to show the general arrangement of the Formwork;
- Specific details of the footings, any penetrations, unusual features, or features not in accordance with the manufacturers recommended installation methods;
- Reference to the manufacturers documentation for the Formwork, including any information relating to component limitations;
- The means of positively securing components which may become unstable or dislodged;
- Specific location of areas designed for loading;
- Details and effect of any post tensioning items;
- Sequence of concrete placement, construction joints, and minimum times between adjacent pours;
- Any design assumptions such as footings, loading, vibrational effects, wind loading, and any limitations;
- The control measures stipulated in the *Q030104 Project Risk Register*; and
- A certificate from the structural engineer stating the design conforms to AS 3610, or outlining the calculations made if AS 3610 is not strictly followed.

13.17.2 Concrete Placement Checklist

Prior to placement of concrete a *Q110810 Structure Sequence* or *S030403 Concrete Placement Checklist* shall be completed by Construction Control Site and the Formwork Sub-contractor to ensure:

- the Formwork installed has been evaluated to the requirements of the Design Plan and AS 3610 prior to the placement of concrete;
- the concrete placement is continually monitored; and
- communication is maintained throughout the pour.

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times;

13.17.3 Formwork Pre-Strip Checklist

The Construction Control Site Manager shall ensure a *S110810 Structure Sequence* or *S030406 Formwork Pre-Strip Checklist* is completed prior to the removal of any Formwork components supporting the building structure. This shall include the written authorisation from the approved Structural Engineer or as per the Structural Engineers stripping detail drawing. This will ensure the structure is of adequate strength prior to removing any components.

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times.

13.18 Scaffold

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times.

Scaffolding must be as per the Industry Scaffolding Code of Practice.

The following specific conditions must be complied with regarding scaffold:

- Prior to coming to site, the Scaffolder shall supply a record of inspection for the materials to ensure they are fit-for-purpose;
- A documented method of erection & dismantle must be agreed upon which does not expose scaffolder to the risk of falling and/or manual handling injuries;
- Erection and dismantling zones must be isolated;
- Incomplete scaffold must be identified and isolated;
- Scaffold must be re-inspected every 30 days, after inclement weather, and after significant modification, with a handover certificate provided;
- A risk assessment has been conducted to determine the need for a Scaffold Plan; and
- Scaffold must be marked to identify the load rating of the scaffold.

For scaffold over 4 metres in height;

- A documented scaffold Design Drawing must be provided to Construction Control prior to erection which is dated, and has details of qualified person/designer, and installation is in accordance with AS 1576 & AS 4576;
- The erector must be an appropriately licenced Scaffolder;
- A handover certificate must be provided to CC to certify the scaffold has been erected as per the Design Drawings, AS 1576 & AS 4576, prior to opening scaffold;
- Changes to the installation design are authorised and signed off by a qualified person;
- *S030414 Scaffold Review* shall be completed by the nominated CC representative upon receiving a Scaffolders handover certificate.

13.19 Mobile Scaffold

All mobile scaffolds over 4m shall be erected and dismantled by a qualified scaffolder as per the Q030409 Inspection Compliance Matrix.

All mobile scaffold under 4m shall be erected and dismantled by a competent person as per the Q030409 Inspection Compliance Matrix.

Erected mobile scaffolds are to be reviewed prior to use by the user and on a regular basis by Construction Control during site walks, S030402 Project Inspection Records and S030413 Work Activity Observations. The S030401 Mobile Scaffold Checklist may be used as a guidance tool to monitor and review the safe erection and use of mobile scaffolds.

13.20 Calibration

All items requiring calibration are to be sent to an appropriate testing authority for testing and certification. Records of calibration is to be provided to Construction Control.

Testing and calibration requirements for plant and equipment will be specified by the manufacturer and may include measurement/testing instruments (such as lasers, RCD testers & gas detectors) as well as post-tensioning/stressing equipment.

Where third-party testing is specified by the manufacturer, third-party test certificates should specify relevant traceability indicators such as; an item identifier (serial number/asset number), reference to the relevant Australian or International Standards, and the measurements or tests conducted on the item.

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times;

13.21 Pre-Cast Panel Erection

All Pre-Cast Panels shall be erected in accordance with the bracing diagram supplied by the Contractor.

CC shall ensure pre-cast panels are fabricated and installed by a competent person and verified as correctly installed prior to use using the *S110815 Pre-Cast Sequence*, that captures an appropriate Inspection & Test Plan (ITP) from the Sub-contractor which shall verify installation as per:

1. relevant legislation, codes of practice and Australian standards;
2. manufacturers' requirements / specifications; or
3. engineer approved drawings/plan

The *S110815 Pre-cast Sequence* verifies that all pre cast panels have been inspected by a competent person at key intervals in the process to ensure it is fabricated/installed/altered/maintained as per the above. The competency and frequency for temporary structures are outlined in the *Q030409 Inspection and Competency Compliance Matrix* and also documented in the *S070301 Project Pre-commencement Review* and *S070802 Feb, May, Aug, Nov Project Quarterly Review.*

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times.

13.22 Structural Support

Equipment and/or Frames used for significant support of materials such as shutters, pre-cast, glass and steel shall have design drawings and/or the WLL marked on the item [exception – General scaffold and formwork are to be managed using the Scaffold and Formwork sections of this Project Management Plan and the Project Risk Register].

All structural support systems and temporary structures (including formwork, falsework, shoring, panel bracing, shotcrete, edge protection, propping and other structural support systems) must be:

- designed by a qualified designer with competency available;
- detailed on up-to-date drawings/plans available to stakeholders / contractors involved; and
- changes to the design or installed system authorised and signed off by a qualified designer.

CC shall ensure prior to making alterations or construction of structural support systems and/or temporary structures an assessment is complete by a qualified person on the structures/materials/foundations; and from this assessment the control measures are transferred into an appropriate SWMS and/or Management Plan.

CC shall ensure structural support systems and temporary structures are installed by a competent person and verified as correctly installed prior to use using the *S110810 Structure Sequence*, that captures an appropriate Inspection & Test Plan (ITP) from the Sub-contractor which shall verify installation as per:

1. relevant legislation, codes of practice and Australian standards;
2. manufacturers' requirements / specifications; or
3. engineer approved drawing/plan.

The *S110810 Structure Sequence* verifies that once installed all structural support systems and/or temporary structures have been inspected by a competent person at regular intervals to ensure it is installed /altered/maintained as per the above. The competency and frequency for temporary structures are outlined in the *Q030409 Inspection and Competency Compliance Matrix* and also documented in the *S070301 Project Pre-commencement Review* and *S070802 Feb, May, Aug, Nov Project Quarterly Review.*

The control measures stipulated in the *Q030104 Project Risk Register* must be adhered to at all times.

14 Hazardous Substances & Dangerous Goods

14.1 Hazardous Substances and Dangerous Goods

For all substances purchased or brought to site a Hazardous Substance and Dangerous Good Register shall be maintained by the relevant Sub-contractors in the Simpel SWMS/Safety Plan Module. Each Hazardous Substance shall be assessed via a Risk Assessment/SWMS/JSA to manage:

- associated risks
- safe use
- environmental protection
- PPE requirements
- storage
- emergency management (e.g., spill kit and fire response)
- health surveillance requirements
- staff training
- and include an attached SDS, dated in the last 5 years.

In an emergency, relevant personnel have access to the SDS via their Simpel profile or an internet search (e.g., Google) at all times via a phone or tablet.

All Construction Control staff, including First Aiders and Emergency Controllers have access to all relevant Hazardous Substances documents via Simpel and the internet.

Standard construction site activities are not likely to see any common hazardous substances used exceed the quantities prescribed in *Schedule 11 of the WHS Regulations*. If the project is likely to have an uncommonly high quantity of a Hazardous Substance or Dangerous Goods a Risk Assessment is to be conducted to consider the management and storage of the product.

Sub-contractors are to ensure adequate segregation of incompatible substance and containers holding hazardous substances are labelled to include:

- product name
- basic safety and environmental information including any risk and safety phrases; and
- if the substance is a Dangerous Good – class label subsidiary risk label and packing group

Refer to Item 9.6 Hazardous Substances in the Construction Control PRR.

14.2 Respirable Crystalline Silica (RCS) Management

RCS exposure is managed on Construction Control sites by requiring that any works that might produce RCS, have a management plan (SWMS or similar) in place that mitigates the risk of RCS exposure.

Refer to Item 9.8 RCS Management in the Construction Control PRR.

15 Health Surveillance

Construction Control will provide health surveillance on the project when:

- A risk assessment identifies that health surveillance is required;
- There is a significant risk to health from exposure to a hazardous substance *{Examples include, but are not limited to: Asbestos, Benzene, Crystalline Silica, and Isocyanates}*; or

As per Regulation 368 all contractors must ensure health monitoring is provided to a worker carrying out work for the business or undertaking if:

- the worker is carrying out ongoing work at a workplace using, handling, generating or storing hazardous chemicals and there is a significant risk to the worker's health because of exposure to a hazardous chemical referred to in Schedule 14, table 14.1 of the WHS Regulations; or
- the person identifies that because of ongoing work carried out by a worker using, handling, generating or storing hazardous chemicals there is a significant risk that the worker will be exposed to a hazardous chemical (other than a hazardous chemical referred to in Schedule 14, table 14.1) and either:
    - valid techniques are available to detect the effect on the worker's health; or
    - a valid way of determining biological exposure to the hazardous chemical is available and it is uncertain, on reasonable grounds, whether the exposure to the hazardous chemical has resulted in the exposure standard being exceeded.

Projects shall assess the requirements for health monitoring and surveillance through two methods. Firstly, reviewing the conditions and documenting this assessment within the Project Risk Register (PRR) and setting frequency based on risk. Secondly is reviewing Hazardous Substance / Dangerous Goods Register “Risk Scores’ and site-specific Risk Assessment or Safe Work Method Statements (SWMS) per product identified as having a medium to high risk on the project in relation to their scope of work.

Situations that may require health surveillance may include but not limited to confined spaces, work involving hazardous substances (MDF cutting, concrete cutting, contaminated water or soil), and work involving excessive noise.

All Hazardous Substance / Dangerous Good SWMS and Registers must define monitoring and Health Surveillance requirements. These are largely based on SDS information (Section 8) and the scope of work to be complete on the specific project.

On review of the PRR, all activities that have a risk score of medium to high shall have health surveillance implemented which in most cases includes environmental monitoring complete.

Construction Controls responsibilities in carrying out health surveillance include:

- informing workers and prospective workers about health monitoring requirements
- ensuring health monitoring is carried out by or under the supervision of a registered medical practitioner with experience in health monitoring
- consulting with workers in relation to the selection of the registered medical practitioner
- paying all expenses relating to health monitoring
- providing certain information about a worker to the registered medical practitioner
- taking all reasonable steps to obtain a report from the registered medical practitioner as soon as practicable after the monitoring has been carried out
- providing a copy of the report to the worker and the regulator if the report contains adverse test results or recommendations that remedial measures should be taken. Also provide the report to all other persons conducting a business or undertaking who have a duty to provide health monitoring for the worker
- keep reports as confidential records for at least 30 years after the record is made (40 years for reports relating to asbestos exposure), and
- not disclose the report to anyone without the worker’s written consent unless required to under the WHS Regulations

16 Inspections, Audits, Monitoring & Review

16.1 Introduction

Construction Control projects shall ensure ongoing monitoring and evaluation of the project to ensure ongoing identification of hazards, evaluating effectiveness of hazard controls, monitoring compliance with both CC requirements and legislative requirements and ensuring contractors ongoing conformance with accepted Safe Work Method Statements.

Inspection of plant and equipment, emergency provisions and High-Risk Activities shall be in accordance with the *Q030409 Inspection and Competency Compliance Matrix*.

HSEQ performance will be monitored and evaluated through audit, inspection, task observation, reporting mechanisms and the formal performance review processes.

16.2 Dis Observation

16.2.1 Informal Task / Hazard Observations

Site monitoring and informal inspection of construction sites and activities shall be performed daily. All workers and employees are encouraged to undertake informal inspections during their movement throughout Construction Control workplaces as part of their daily activities, and to report any situations that they consider to be unsafe or unsatisfactory to their supervisor and record the details in the Simpel Site Diary.

16.2.2 Formal Observations

Four or more *S040413 Work Activity Observations* of sub-contractor activities are to be undertaken per month in consultation with the nominated sub-contractor and recorded using the *S040413 Work Activity Observation*. Work Activity Observations are conducted to assess the effectiveness of the sub-contractors HSEQ documentation and the workers understanding and adherence of them.

It is expected that two team members complete the *S040413 Work Activity Observation* together where possible, with at least one person experienced in monitoring the works being observed. It is intended that that the process is educational and constructive, however any significant or persistent issues identified shall be raised in a *S040301 Corrective Action Report*.

Project teams shall complete a *S040413 Work Activity Observation* targeting the areas listed below and also to manage project specific risks or issues.

Work Activity Observation – Target Areas:

- Risk of falls greater than 2 metres
- Likely to involve disturbing asbestos
- Work in or near a shaft or trench with an excavated depth greater than 1.5m
- Work with tilt up or pre-cast concrete
- Temporary load-bearing support structures (Formwork)
- Work on, in or adjacent to road, rail shipping or other major traffic corridor
- Work on or near energised electrical installations or services
- Work in an area with movement of powered mobile plant
- Work in confined spaces
- Work on or near pressurised gas pipes or mains
- Work in an area with contaminated or flammable atmosphere (Silica & Asbestos)
- Demolition of a load-bearing structure

16.3 Inspections

As a minimum, weekly formal project inspections shall be performed on construction projects by the CC Site Manager, with nominated Sub-contractor/s where available using the *S030402 Project Inspection Record*.

Work shall be stopped where appropriate control measures are not followed. Control measures are outlined in the PRR and the contractors SWMS. If required, CC shall back-charge contractors to complete key controls such as maintaining housekeeping.

The Project Manager and/or HSEQ Advisor shall complete formal monthly site inspections in consultation with the Site Manager to monitor that WH&S, Environmental and Quality Assurance aspects are implemented.

Inspection findings shall be included in the *S020207 Project BMS Performance Meetings*. Issues raised at inspection that are not resolved within set time frames shall have a *S040301 Corrective Action Request* (CAR) raised and sent through to the Project Manager for action.

Inspections of the workplace and specific activities shall be based on risk. During CC site managements regular review of the PMP, PRR, PEP and PRM; and where required during monthly *S020207 Project BMS Performance Meetings*, activities with a 'high risk' or greater shall be identified and a program established based on risk to review and monitor these processes.

16.4 Environmental Inspections

Where the project (or part of) is exposed to extreme environmental conditions, specific areas shall be inspected by the Site Manager in consultation with respective contractor supervisors to formally assess and hand-over areas as safe before work can proceed. The *S030302 Environmental Condition Checklist*, in Simpel, shall be used at the Site Manager's discretion after and/or as a minimum during severe environmental conditions such as frost, heat, air quality and/or high winds defined within the *Q030409 Inspection and Competency Compliance Matrix*. Where required 'special conditions' shall be documented to allow works to commence / continue in a particular area.

Projects shall assess the requirements for environmental monitoring by reviewing the identified environmental conditions within the PRR and setting frequency based on risk. On review of the PRR, all activities that have a residual risk score of severe or high will have environmental monitoring and where required health surveillance conducted.

16.5 Noise & Vibration

Noise controls shall be developed for activities that have the potential to exceed 85dB in accordance the *Code of Practice for Managing noise and preventing hearing loss at work*. These will be generally managed by isolation of the noise and the use of appropriate PPE at the source. Ongoing observation will be carried out across the project to ensure noise management techniques remain suitable.

16.5.1 Noise

Standard construction hours, as set by the Project Risk Registers environmental impact assessment are:

- 7am to 6 pm Monday to Friday.

Work outside standard construction hours with the potential to be audible to sensitive receivers requires prior approval.

Contractors that are deemed to potentially be undertaking noisy works will submit a Safe Work Method Statement / Risk Assessment which includes the schedule of equipment types to be used, noise levels these will generate if applicable, expected time and duration of use, and any measure required to ensure noise levels are acceptable.

All typical plant and equipment used during the construction and demolition works will be the maximum noise levels specified (at 7 meters).

All workers on the project shall be made aware of risks of construction noise exposure through the site induction.

16.5.2 Vibration

When planning for construction work like vibration, all practical effort will be made to protect vibration sensitive buildings and the amenity of the occupiers of the buildings.

Where appropriate the project will apply a practical and economical combination of vibration control measures to manage vibration impacts such as:

- Substitution by alternative process.
- Restricting times when work is carried out.
- Erecting screening or enclosures.

- Undertaking construction with affected residents or client personnel.

The basis for vibration management will be to limit the times that certain vibration producing activities may be carried out.

No vibration causing construction or demotion works will be permitted within 50m vicinity of any heritage listed items, features of cultural significance or sensitive client equipment (as advised by the client), without a location and activity specific risk assessment being carried out by a competent person and approved by the client and CC site management. Where appropriate vibration monitoring during the works should be carried out to ensure vibration doesn't exceed acceptable limits.

For all environmental noise and vibration aspects and impacts refer to the Project Risk Register.

16.6 Weekly Hazard Forecast

At the start of each week the CC Site Manager shall complete a *S030105 Weekly Hazard Forecast* or *Q030109 Daily Pre-Start* meeting to identify major hazards that are likely to occur in the coming week e.g., scaffold on east side being altered or stripped, concrete pour on Tuesday, etc. This will be placed on the Project Notice Board for workers to see as they enter to ensure effective communication.

16.7 Project BMS Performance Review

The Project Manager shall prepare a *S020207 Project BMS Performance Meeting* for review at a monthly Project BMS Performance Meeting. Where practical, the entire Construction Control project team should attend and participate in the meeting. The meeting will review progress against objectives and targets and communicate information relating to the performance of the project.

As required, Senior Management will issue BMS Alerts to identify issues that need to be actioned, communicated, or disseminated at a site management level. Project Managers shall review and discuss BMS Alerts in the monthly Project BMS Performance Meeting and ensure that appropriate action is taken.

The Project Manager shall document the meeting using *S020207 Project BMS Performance Meeting* and submit the completed form via Simpel prior to the 7th of each month.

Senior Management shall communicate to Site Management performance against WHS objectives and targets via a monthly email.

16.8 Senior Management Site Visits

Senior management shall complete a quarterly site visit to inspect sites and discuss issues with project personnel, promoting discussion around the CC BMS culture. Senior Management is to coordinate visits with Project Managers and document inspection using the *S030420 Senior Management Checklist*.

Senior Management discussions may include but not limited to:

- results from monthly project performance meetings.
- results from quarterly board / senior management meetings.
- new initiatives.
- research activities.
- areas for improvement; and/or
- objectives and targets.

16.9 Project Audits

Project BMS audits shall be performed by the HSEQ Manager or other competent person nominated by the HSEQ Manager. Auditors must hold at least Internal Auditor competency. Audits will be completed in accordance with the *Q040104 Corporate BMS Schedule,* and results recorded using *S040102 Project BMS Audit Record*.

16.9.1 Scope:

The scope will be decided by the auditor based on the relevant elements of this Project Management Plan. The initial audit is a full compliance audit to ensure system implementation; with ongoing audits based on High-Risk Activities defined in the Project Risk Register.

16.9.2 Frequency:

- The initial internal audit is to be undertaken not more than one month after commencing work onsite.
- Internal audits are to be scheduled at maximum (6) monthly intervals; and,
- The audit schedule and additional audits are planned based on risk –PRR shall identify activities with high to severe residual risk scores. Projects with high to severe residual high risks shall be audited at a maximum of (3) monthly intervals

Additional audits are to be considered in response to any of the following triggers:

- Increase in incidents or an occurrence of a serious incident.
- Areas of significant change (i.e., new/modified equipment, substances, processes or environment);
- High Risk Work – significant number of severe to high residual risk scores in PRR.
- Results of previous audits – Projects with results below 90% shall be subject to a re-audit within (1) month; and
- Concerns raised in inspection reports.

16.9.3 Method:

- The auditor shall arrange the audit with the Project Manager.
- The *S040102 Project BMS Audit Record* will be used to conduct the audit.
- The Project Manager is to review the *S040102 Project BMS Audit Record* and acknowledge any deficiencies.
- Deficiencies identified are to be actioned within 10 working days, with the exception of high risks which are to be actioned immediately.
- Deficiencies identified which are BMS based shall be forwarded to the HSEQ Manager and actioned in accordance with the Project Management Plans Corrective Action Process defined in Section 23.
- Project Manager to instigate / complete corrective actions as required; and
- HSEQ Manager to ensure corrective actions are complete with closeout and effectiveness verified with objective evidence.

Audit reports and records of actions taken as a result of all audits shall be maintained for no less than seven (7) years. In addition to internal project audits, audits may be performed by external parties during the delivery of the construction project. For example, FSC project safety audits or audits performed by an external party and engaged by Construction Control Senior Management.

17 Incident Management

An incident is considered an occurrence that has or may have resulted in the injury or illness of a person or damage to property. This includes (but not limited to) injuries, dangerous occurrences and near misses but excludes first aid treatments.

Under no circumstances are employees or subcontractors permitted to make a statement to the media. All requests for comment should be forwarded to the Managing Director.

17.1 Immediate Response

In the event of an incident, the Sub-contractor or person/s involved must contact Construction Control supervisory staff immediately. Project personnel will then undertake the following actions:

- Take action to control the situation and administer first aid if required.
- If the incident is significant, contact Emergency Controller and commence emergency actions in accordance with Project Management Plan section 11 – Emergency Preparedness if required.
- Emergency Controller to contact HSEQ Manager by phone to inform of the incident.
- Isolate the affected area and liaise with the HSEQ Manager to agree on actions required prior to re-

opening the affected area; and
- Report the incident as per section 22.3 below

17.2 First Aid

Construction Control projects will ensure that a minimum of one qualified first aider is available at all times on site. An assessment of first-aid requirements based on scope of works shall be complete by an appropriately trained Emergency Controller (EC) who holds a current 'Provide First Aid (Senior First Aid)' qualification.

Assessment of the first aider's competency level and equipment / supplies required shall be conducted using the *Q070603 Project Emergency* Plan, First Aid Risk Assessment and referring to the Code of Practice First Aid in the Workplace. First-aid requirements will be further documented in the Emergency Arrangements section of the PRR and detailed in the PEP, Section 8.

The First Aid Officer is to have their identity displayed on the Project Notice Board with contact details.

Emergency contact names, numbers and address of the nearest medical centre is to be displayed within each workplace, identified in the PEP and form part of the workplace specific induction.

At a minimum Construction Control will provide suitable first aid kits in the following locations:
- Site Office / First Aid Room; and
- On multi-storey buildings at least one kit is provided on each alternate level or located in the hoist.

Where impractical to locate first-aid kits at the above locations the EC, in consultation with the CC Project Manager, shall complete a risk assessment (*S070603 Project Emergency Plan, Appendix I*) to assess other suitably approved means.

In addition to suitable first aid facilities, appropriate communication methods for use in the event of an incident are to be established, documented on the first aid risk assessment, and communicated to all personnel.

Preference should be given to using nurse call or equivalent, however other potential methods of communication include phone, radio, or other electronic means. These details are to be included in the site induction, displayed on site notice boards and in prominent locations on site.

It is the site First Aid Officer's responsibility to ensure the first aid kits are adequately stocked at all times a *S070608 First Aid Checklist* is completed on a quarterly basis using the *S070801 Jan, April, July, Oct Project Quarterly Review.* First aid signs are to be displayed on the outside of a room containing a first aid kit.

A First Aid Treatment is defined as a minor cut or abrasion not requiring medical treatment, where a dressing is applied, and the worker is able to return to work. Any injury more significant is classified as an Incident. All First Aid Treatments must be recorded on the *Q040202 First Aid Register* but do not require an investigation unless deemed necessary by the Project Manager. The *Q040202 First Aid Register* will be reviewed at the Project *S020207 BMS Performance Meetings* to ensure there are no ongoing issues requiring closer attention.

Incidents sustained by Construction Control employees must be reported to the HR Manager as soon as possible after completion of the *S040102 Incident Report*, but no longer than 24hrs after the injury / incident has occurred.

17.3 Mental Health First Aid

Construction Control recognises the impact that emotional distress can have upon the workplace and community. To assist workers on our sites struggling with personal, family, financial or workplace stress, Construction Control will provide a qualified Mental Health First Aider as a trained first point of contact.

Construction Control projects will ensure, on projects with over 50 workers on site on a regular basis, that a Construction Control staff member, with 100% of their time assigned to the project, is a qualified Mental Health first-aider and their photo and contact details are available at induction and upon the Project Notice Board.

17.4 Investigation and Reporting

All incidents must be:

- managed to minimise consequences.
- reported to the Project Manager immediately.
- reported to the client as soon a reasonably practicable.
- recorded on an *S040102 Incident Report*.
- reported to the HSEQ Manager within 24hrs.
- investigated by appropriately trained personnel and/or HSEQ Manager using the *S040501 Incident Investigation Record* as soon as possible after the event to prevent contamination of evidence; and
- Investigated to identify **root cause** and actioned to prevent recurrence.

Immediately after becoming aware that a notifiable incident under the *Work Health and Safety Act* or dangerous occurrence under the *Dangerous Substances Act*, CC's Project Manager, HSEQ Manager or another member of CC Site Management must ensure that WorkSafe is notified of the 'notifiable incident'/dangerous occurrence *by the fastest possible means*.

In the event of becoming aware of a Notifiable Incident, the Project Manager must inform the HSEQ Manager immediately via phone who will then:

- ensure they are involved in the investigation.
- engage external specialists as required.
- ensure the project have isolated the scene at a 4m radius except in accordance with the relevant legislative requirements to save life, prevent further injury to persons or damage to property.

A Medically Treated Injury (MTI) is defined as:

a work-related occurrence that results in treatment by, or under the order of, a qualified medical practitioner (see below), or any injury that could be considered as being one that would normally be treated by a medical practitioner but does not result in the loss of a full day/shift.

The following would normally be considered medical treatment:

- Admission to a hospital or equivalent for treatment or observation
- Admission to a hospital or equivalent for observation for a period of more than 12 hours
- Surgery
- Treatment of fractures, including positive X ray diagnosis
- Treatment of partial or full thickness burns
- Dislocations
- Treatment of bruises requiring drainage of blood
- Insertion of sutures, Medi-glue or staples
- Removal of foreign bodies embedded in the eye
- Eye injuries resulting in ulceration or swelling of the cornea or chemical conjunctivitis
- Removal of foreign bodies from a wound if the procedure is complicated by the depth of embedment, size or location
- Surgical debridement
- Skin grafts
- Application of antiseptics during second or subsequent visits to medical personnel
- Any work injury that results in a loss of consciousness
- Treatment of infection (this does not include measures to prevent infection e.g., wound dressing)
- Use of prescription medications (except a single dose administered on the first visit for minor injury or discomfort)
- Treatment (diagnosis and evaluation) by a psychiatrist for mental illness or stress as a result of a workplace occurrence.
- Provision of Antivenin

- Dental treatment (not including diagnostic procedures)
- Complications of an injury where the complication requires medical treatment e.g., treatment of infection or an allergic reaction

The following on their own would not normally be considered medical treatment:

- Treatment of First Aid injuries, including where a health care professional provided the first aid e.g. Hospital Emergency (no admission)
- Treatment by Paramedics
- Closure of wounds using Butterfly clips or Steri-strips
- Admission to a hospital or equivalent for observation for a period of less than 12 hours
- Diagnostic procedures like X-rays, ECG's and blood tests
- Visit to a medical practitioner for consultation, observation, assessment or counselling.
- Preventative treatments such as antibiotics or first application of antiseptic
- Administration of tetanus shots or boosters
- Physiotherapy
- Diagnostic procedures such as X-rays or laboratory analysis, unless they lead to further treatment
- Referral to/treatment by a psychiatrist where the diagnosis is not a result of a workplace occurrence.
- Removal of foreign bodies from wound using flushing or tweezers

Do not report first aid treated injuries in this category.

A Lost Time Injuries (LTIs) is defined as:

a work-related occurrence that results in a permanent disability or injury resulting in time lost from work of one day/shift or more. LTIs include physical injuries (i.e., cuts, burns, fractures etc.) as well as instances such as where a worker experiences psychological stress due to witnessing a traumatic event or being a victim of bullying (and may require time off work as a result), or if they required medical attention due to migraines caused by exposure to chemicals or gas.

A serious injury or illness under the WHS Act means an injury or illness requiring the person to have:

- immediate treatment as an in-patient in a hospital [**Note:** it is not necessary that the person was actually sent to or treated as an in-patient, it is sufficient that the injury or illness could reasonably be expected to warrant such treatment]
- immediate treatment for an amputation, a serious head or eye injury, a serious burn, degloving or scalping, a spinal injury, the loss of a bodily function or serious lacerations
  medical treatment within 48 hours of exposure to a substance.

A 'dangerous incident' under the WHS Act means any incident in relation to a workplace that exposes a worker or any other person to a serious risk to a person's health or safety emanating from an immediate or imminent exposure to:

- an uncontrolled escape, spillage or leakage of a substance
- an uncontrolled implosion, explosion or fire
- an uncontrolled escape of gas or steam
- an uncontrolled escape of a pressurised substance
- electric shock
- the fall or release from a height of any plant, substance or thing
- the collapse, overturning, failure or malfunction of, or damage to any plant that is required to be authorised for use in the regulations
- the collapse or partial collapse of a structure
- the collapse or failure of an excavation or of any shoring supporting an excavation
- the inrush of water, mud or gas in workings, in an underground excavation or tunnel
- the interruption of the main system of ventilation in an underground excavation or tunnel or
- another event prescribed in the regulations.

The site of the incident must not be disturbed until a WorkSafe inspector either attends the site or such earlier time as an inspector directs.

CC HSEQ Manager shall within 48 hours of the initial notification, notify WorkSafe in writing of the notifiable incident /dangerous occurrence by completing the required form & forwarding it to WorkSafe

The CC HSEQ Manager shall notify the **OFSC** taking into consideration the following times.

a) All fatalities irrespective of the project value

b) Notifiable incidents or LTI on both Scheme and non-Scheme projects where the project value is $3 million or more

c) Any incident resulting in an MTI or dangerous occurrence on a Scheme project

Where a system failure is identified CC shall review relevant process including induction procedures, PRR, PMP, PEP, PRM and SWMS at a project level or corporate level depending on the significance of the failure identified.

All major system failures, incidents involving Unions, Emergency Services, Police, WorkSafe, Media or reportable LTI / Dangerous Occurrences shall be reported immediately or as soon as practical to the CC HSEQ Manager and Project Manager who will in-turn report the incident to Project Director and Managing Director.

Where an incident involves the media, a fatality or a CC worker is expected to have a Lost Time Injury (LTI) greater than 7days a company Director shall be notified as soon as possible to be directly involved in incident investigations.

17.5 Serious Electrical Incidents

Under the Electrical Safety Act in the event of a serious electrical incident, Construction Control and the projects electrical contractor are to report the incident to the relevant distributor via phone immediately after becoming aware of the event. The affected area is to be isolated and made safe; before appropriate reporting can proceed.

17.6 Critical Incident Management

Critical Incidents shall be managed in accordance with Procedure 4.05 Incident Management and Reporting.

A ‘Critical Incident’ is defined as a traumatic event that causes or is likely to cause extreme physical damage and/or emotional distress with the potential to affect and/or attract unwanted attention to the undertakings of the organisation including events leading to media attention.

If a critical incident occurs, Construction Control’s Project Manager shall:

1) Isolate the affected personnel in a quiet and safe environment.
2) Organise for counselling services to be made available to any persons involved in the incident, their family members or any other workers on site, via HSEQ Manager and Managing Director.
3) Nominate a central contact person from Construction Control.
4) Continually update the affected persons to communicate information as required.
5) Conduct a debrief meeting at the conclusion of the critical incident to review statements to the media, coordinate follow-up investigations and to ensure appropriate communication takes place with all applicable third parties

17.7 Close Out of Incidents

Incident investigations should be complete in consultation with involved parties and identify root cause and practical control measures based on applicable information to mitigate risk of reoccurrence. Actions required as a result of investigations must be documented using the *S040501 Incident Investigation Record*. These actions must be closed within the timeframe set and will be monitored using the *S020207 Project BMS Performance Meeting*. For “significant actions”, a CAR must be raised in accordance with Section 20 of this Project Management Plan.

Incidents relating to a Medical Treatment or Lost Time Injury will require the worker to produce a medical certificate after each doctor’s visit. Medical certificates must be produced upon Return to Work.

18 Workers Compensation

18.1 Construction Control Employees

All injuries must be reported to the Site Manager and CC Injury & RTW Coordinator using the Incident Notification Form. The CC Injury & RTW Coordinator will carry out all Workers Compensation processes.

The Return-to-Work Program is to be displayed for Construction Control employees.

Incidents that occur during a worker's Return to Work Program are to be reported to the Site Manager and HR Coordinator using the *S040201 Incident Notification*.

18.2 Contractors

All Contractors will provide Construction Control with proof of Workers Compensation Insurance as part of the tender review process and as they are renewed. Continual information relating to all Workers Compensation Claims resulting from an injury sustained on a Construction Control project, must be forwarded to the Project Manager so the claims can be monitored for Return to Work & injury close out.

19 Hazard Reporting, Corrective Action and Positive Reinforcement

A conversation is the first step in managing and resolving minor HSEQ issues. Where a hazard cannot be fixed immediately, the direct area shall be made safe and/or isolated to prevent exposure to other trades and/or public. Hazards that cannot be immediately fixed, shall be reported to CC Site Management as soon as possible using the *S040204 Hazard Report Form*. This process ensures that hazards can be rectified immediately or as soon as practical.

A *S040301 Corrective Action Request (CAR)* is to be raised for major or persistent HSEQ issues. A CAR is to be considered educational, not disciplinary, and the wording needs to reflect this intent.

Where a HSEQ issue is raised through an audit or improvement observation a *S040301 Corrective Action Request (CAR)* shall be raised to ensure corrective and preventative actions are completed within set timeframes.

CARs are documented in Simpel and discussed at the monthly *S020207 Project BMS Performance Meeting* in order to ensure action is taken to correct or improve the HSEQ systems, processes and / or behavioural compliance.

A *S040302 Complements and Leadership Report (CLR)* is to be raised for significant or ongoing HSEQ adherence or improvements. The purpose of a CLR is to recognise personal and organisational dedication to HSEQ standards and improvements.

The HSEQ Manager will maintain a register of CAR and CLR forms issued, for the purpose of completing a Sub-Contractor Procurement Assessment during the Tender Review.

Associated Corporate Procedures: 4.02-Non-conformance Management & 4.03-Improvement Process

19.1 Identifying and Raising a CAR

A CAR shall be raised to either the project, system, sub-contractor, and in some case multiple parties. The project shall ensure CARs are formally raised in the following circumstances:

- Where an unsafe action/condition or hazard is identified and requires attention that cannot be rectified immediately at the time (e.g., during inspection) and is expected to take more than 24hrs to implement;
- Where deficiencies are identified during the project monitoring and review processes, including corrective actions identified during an BMS audit.
- Where a worker fails to comply with a requirement of HSEQ legislation, a BMS directive issued by Construction Control, a Safe Work Method Statement or safe work instruction.
- A HSEQ issue arising from Construction Control operations that represents an imminent risk to worker, public, or environment; or

- An ongoing the HSEQ dispute that requires management attention.

When the requirement is identified a *S040301 Corrective Action Request (CAR)* is to be raised and distributed as follows:

1) Provided to the Construction Control Project Manager for approval.
2) Forwarded to the involved parties via Simpel and followed up with a phone call or email.
3) All CAR's will be automatically forwarded to the HSEQ Manager following PM approval.
4) Simpel will automatically maintain a CAR register.

19.2 Monitor, Review and Close Out of CARs

The Project Manager shall ensure that the status of open CARs is reviewed on a monthly basis at the *S020207 Project BMS Performance Meeting*. The Project Manager shall ensure that CARs are closed out within the specified timeframe and in consultation with the Site HSEQ Advisor, ensure corrective actions taken are satisfactory and implemented.

Project Simpel will be used to communicate with all parties involved in the CAR and follow up the status of actions underway until the CAR is closed.

14 days after a CAR is closed, Project Simple will automatically prompt the Project Team to complete a review of the control measures implemented in the CAR to ensure they have been effective.

19.3 Identifying and raising a CLR.

A CLR shall be raised to either a staff member, Sub-contract worker or Sub-contract organisation, and in some case multiple parties. The project shall ensure a CLR is formally raised in the following circumstances:

- Where an outstanding HSEQ outcome has been implemented or achieved.
- Where a high standard of HSEQ implementation is being achieved over a period of time.

When the requirement is identified a *S040304 Compliments and Leadership Report (CLR)* is to be raised in Simpel and distributed as follows:

1. Provided to the Construction Control Project Manager for approval.
2. Forwarded to the involved parties via Simpel and followed up with a phone call or email.
3. All CLR's will be automatically forwarded to the HSEQ Manager following PM approval.
4. Simpel will automatically maintain a CLR register for each project.
5. Complete a Q040303 Compliments and Leadership Certificate and send a copy to the relevant person/organisation.

There is no follow up or close out required.

20 Document Control and BMS Filing System

20.1 Introduction

All project specific CC BMS documentation developed shall be reviewed, controlled, maintained and readily accessible at all times. All records generated by this Project Management Plan and associated procedures must be placed recorded in Simpel.

Relevant CC BMS information will be made available upon request to associated parties on the project, including external parties (the client, contractors, suppliers and public authorities) after approval by the Project Manager or HSEQ Manager.

20.2 Project Management Plan – Document Control

20.2.1 Project HSEQ Documentation Development

Construction Control's HSEQ documentation is regularly reviews as part of the continual improvement process. Changes to CC BMS are communicated via whole of company BMS Alerts. The current version of all CC documentation is saved in the CC BMS and on Simpel.

20.2.2 Project Documentation Review

Project specific HSEQ documentation is to be reviewed quarterly via the quarterly review process. Projects need to take into consideration any updated information on the upcoming construction phase, specific site hazards, records of incidents, and outcomes of meetings and other reviews when updating information.

20.3 Management of WH&S, Environmental & Quality Assurance Records

Construction Control projects shall ensure HSEQ records are completed correctly and stored on Simpel or within the BMS Filing System. All relevant HSEQ records shall be stored and maintained in a secure and orderly manner, so they remain legible and identifiable. Records will be kept for a minimum period of seven (7) years, unless the records are pertaining to Health Surveillance, where the records will be kept for thirty (30) years.

20.4 Filing System

The Project Manager shall establish the electronic filing systems for all CC BMS documentation. Simpel is to be used primarily with SharePoint the backup for any documentation not uploaded to Simpel.

20.5 Additional Documents

Relevant quality assurance, environmental or WH&S legislation, Codes of Practice and Australian Standards for the building and construction industry are available to Construction Control personnel in Folder 20 of the CC BMS.

Where workers require additional BMS documents and guidance materials they are to request the information / publication from the Project Manager who will source the relevant material/s.

ATTACHMENT E – CONSTRUCTION CONTROL PROJECT RISK REGISTER

PROJECT RISK REGISTER

Diggings Terrace

Scope of works:
Alpine resort style development comprising parking, bar, restaurant, gym/yoga/spa/wellness space, 2 accessible units, 14 residential terraces & 5 luxury mountain homes.

Start date Late 2022.

Plan Version:	1	Date:	1/04/2022
Developed by:		Approved by:	
Name:	Chris Ison	Name:	Ben Eddy
Position:	HSEQ Advisor	Position:	Project Manager
Developed in consultation with:	Construction Control HSEQ Manager and BMS Control Group		

*The project teams acknowledgement of the PMP will be recorded in the SWMS/Safety Plan module of Simple.

Comments / Changes made in this version of the PRR:
1. Deletion of non-applicable controls – 31/3/2022
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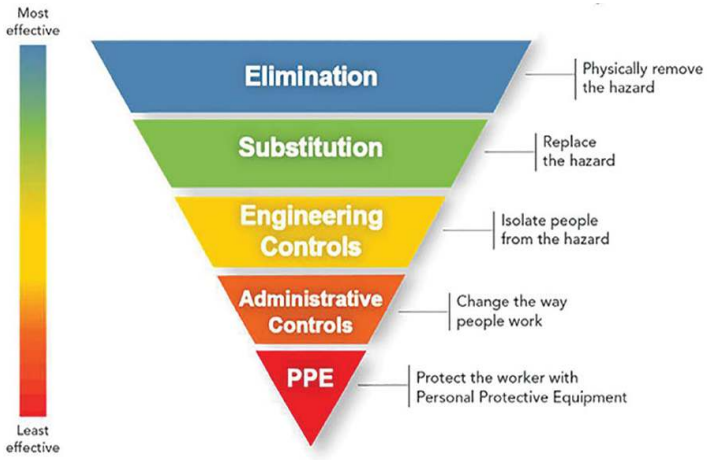
Construction Control Risk Matrix

A		*Qualitative Scale*	*Quantitative Scale*
	Extreme	Fatality, significant disability, catastrophic property damage	$50,000□
	High	Minor amputation, minor permanent disability, moderate property damage	$15,000□$50,000
	Medium	Minor injury resulting in an Loss Time Injury or Medically Treated Injury	$1,000□$15,000
	Low	First Aid Treatment with no lost time.	$0□$1,000

B		*Magnitude Scale*	*Probability Scale*
	Likely	Monthly in the industry	Good chance
	Possible	Yearly in the industry	Even chance
	Unlikely	Every 10 years in the industry	Low chance
	Very Rarely	Once in a lifetime in the industry	Practically no chance

C		Likely	Possible	Unlikely	Very Rare
	Extreme	16	14	11	7
	High	15	12	8	4
	Medium	13	9	5	2
	Low	10	6	3	1

D	Score	Ranking	Action
	14 - 16	Severe (S)	Action Immediatel y
	11 - 13	High (H)	Action with 24 hrs.
	7 – 10	Medium (M)	Action within 48 hrs.
	1 – 6	Low (L)	Action within 5 working days.



As a guide the following 'Hierarchy of Controls' shall be used when considering risk controls during a risk assessment:

- Level 1: Eliminate the hazard
- Level 2: Substitute the hazard for something safer. Isolate the hazard from people. Reduce the risks through engineering controls
- Level 3: Reduce exposure to the hazard using administrative actions. Use personal protective equipment

Procedure 3.01 Risk Management provides detailed guidance on how to complete a Risk Assessment.

	Hazards / Aspects & Risks / Impacts	Initial Risk Score	Control Measures / Risk Treatment	Legislation, Codes of Practice, and Guidelines (including other available information on hazard / risk)	Residual Risk Score
1. HIGH RISK CONSTRUCTION ACTIVITIES			[s291(k) Work Health Safety Regulations]		
1.1 Work that involves a risk of a person falling more than 2m	Falling object	15 Severe	▪ Where there is a potential for an object to fall into an existing work area the area below shall be isolated with a physical barricade and signposted ▪ All tools / equipment shall be stored 2m from any exposed edges ▪ Where there is a potential for an object to fall into public space supporting a road, foot path or structure, full enclosure screening shall be installed on perimeter face affected to a minimum height 2 metres above the last working deck ▪ Where required appropriate hoarding / gantry shall be erected to prevent falling object risks to public ▪ Where a risk assessment identifies a medium to high risk of uplift and/or dislodgement anticipated (I.e. strong winds) planks must be secured / lashed	WH&S Reg 2011, s79 & s225 Falls CoP AS 1576 Scaffold AS 4576 Scaffold	8 Medium
	Falling person	16 Severe	▪ Appropriate edge protection must be installed at all times. At 1.8 metres this shall include handrail (900 mm), mid-rail (500 mm) and toe boards (150 mm), or mesh screens incorporating kick-plates of a solid construction shall be provided ▪ Temporary edge protection must be registered with inspection and maintenance frequencies defined ▪ Temporary edge protection that is intended to protect persons working on roofs of buildings having slopes not greater than 35° must be engineer certified to comply with AS 4994 ▪ Temporary edge protection including formwork and excavation handrails must be of a solid construction and be inspected / verified as per manufacturers / engineers specifications ▪ Gap between working platform and building horizontally to be no greater than 225mm; floor to be to be no greater than 300mm vertically from structure platform ▪ Planks must have a 300mm overlap or be secured / lashed ▪ All fall zones must have suitable fall protection implemented using the 'Hierarchy of Control': - Work from the ground or a solid structure; - Work using Perimeter Scaffolding [Refer to Section 4.7 of this PRR]; - Work using EWP (Scissor-lift, Boom-lift, etc.) [Refer to Section 4.6 of this PRR]; - Work Using Mobile Scaffold [Refer to Section 4.8 of this PRR]; - Work using Platform ladder / Trestle [Refer to Section 4.18 of this PRR]; - Work using Step ladder / Builders ladder [Refer to Section 4.18 of this PRR]; - Work using Fall-arrest equipment (harness / lanyard) [Refer to Section 4.19 of this PRR] ▪ CC shall develop and maintain a Project Emergency Plan (PEP) and communicate emergency procedures to all. Emergency procedures for Fall from Height Incident are documented Section 10.10 of this PRR	WH&S Reg 2011, s54 Falls CoP, Section 4.2 AS 1576 Scaffold AS 4576 Scaffold AS 4994 Temporary edge	7 Medium

1.2 Work that involves structural alteration requiring temporary support to prevent collapse	Unplanned collapse		▪ Complete a Q070407 Latent Conditions Checklist prior to the project commencing ▪ Obtain engineer approved drawings / specifications – ▪ Develop a site-specific risk assessment in consultation with stakeholders involved with the task and have this approved by the Project Manager, Site Foreman and CC Systems Manager ▪ Inspect structural alterations or repairs as per engineer approved drawings / specifications during weekly HSE Inspections to ensure not deteriorated ▪ All temporary props installed on the project are to be effectively secured top and bottom to prevent dislodgement – L2 ▪ Structural support systems (including formwork, falsework, shoring, panel bracing, edge protection, propping and other structural support systems) have been: - designed by a qualified designer; - detailed on up-to-date drawings/plans; and - changes to the design or installed system are authorised and signed off by a qualified designer.	WH&S Reg 2011, S142 Demolition CoP, S3	
1.3 Work that is carried out in or near a confined space	Incompetent workers	12 High	▪ CC's Q030430 Confined Space Permit is to be complete in consultation with stakeholders involved and approved by CC Site Management; ▪ Develop a site-specific risk assessment in consultation with stakeholders involved as per AS2865 ▪ All persons entering the confined space and the stand-by person are to have completed appropriate training including: - the hazards of confined spaces; and - risk assessment procedures; and - risk management steps; and - emergency procedures; and - selection, use, fitting and maintenance of safety equipment.	WH&S Reg 2011 S39 and Part 4.3 Confined Spaces CoP AS 2865 Confined Spaces	4 Low
	Asphyxiation	16 Severe	▪ CC shall develop and maintain a Project Emergency Plan (PEP) and communicate emergency procedures to all. Emergency procedures for confined space is documented in Section 10.8 of this PRR		7 Medium

1.4 Work that involves Excavation	Striking live services Fall from height – person / object	15 Severe	▪ CC's *Q070406 Pre Excavation form* and *S030425 Excavation Permit* is to be completed on Project Simpel, (How To Guides are available in Folder 18 of the BMS) in consultation with the stakeholders involved and approved by CC Site Management before commencing all excavations; ▪ Develop a site-specific risk assessment in consultation with stakeholders to identify excavation risk level: - Low risk excavations shall have falls controlled by other practical means using the 'Hierarchy of Controls' - Medium to High risk excavations shall have falls, including access / egress managed with Engineering Controls ▪ Barricade excavations at least 1m from edge unless engineer certified handrail able to withstand expected forces ▪ Provide a designated safe means of entry and exit ▪ Tools and material to be stored at least 1m back from excavation edge ▪ Ensure safe, suitable access is provided at all times to work areas ▪ Excavation machinery must have appropriate edge protection at all times in-place including for routine maintenance and inspections ▪ Ensure access ladders where used are appropriately secured top and bottom and extend 1m past the landing	WH&S Reg 2011, Division 6.3.3 Excavation CoP Falls CoP Plant CoP Work Environment CoP	4 Low
	Damage to adjacent structures	16 Severe	▪ Complete a dilapidation report/engineering advice on all buildings / structures within the zone of influence – L2 ▪ Ensure consultant has complete explosives management plan to be submitted to WorkSafe for approval – L3	WH&S Reg 2011, S297 and 142	
	Drowning	16 Severe	▪ Ensure excess water is pumped from excavations prior to working in areas ▪ Ensure safe and practical access is provided to work areas at all times with no exposure to fall zones ▪ After excessive water stability of excavation is to be reassessed	WH&S Reg, S305 Excavation CoP, S5	7 Medium

	Collapse & engulfment	16 Severe	▪ CC shall ensure workers in excavations / trenches have available appropriate evidence that they have been trained in trench / excavation collapse emergency procedures – L3 ▪ CC shall develop and maintain a Project Emergency Plan (PEP) and communicate emergency procedures to all. Emergency procedures for excavation collapse are documented Section 10.6 of this PRR – L3 ▪ Bench/batter/shore all excavations exceeding 1.5m, unless otherwise authorized by a Geotechnical Engineers Report – L2 Where a geo-technical report is provided CC shall ensure it: - Is suitably details to describe current site conditions with no ambiguous statements; - Includes diagrams and photos are necessary; - Incudes geo-tech engineers competency ▪ Mobile plant must be positioned outside the zone of influence unless geo-tech report specifies otherwise L2 ▪ Place spoil at least on the downside of excavations out of zone of influence – L2. ▪ Ensure excavation has appropriate controls for the protection against rising, irruption or inrush of water or material – L2. Controls may include (but not limited to): - Implementing isolation measures such as barriers or valves - diverting water or material from open excavation; and/or - Provision of pumps ▪ Monitor excavation for soil instability – L3 ▪ Where a proprietary shoring system is to be utilised, CC shall ensure: - L2 - Manufacturers Instruction Manual and/or Installation Procedures are followed. - Workers are trained and competent in the use of the propriety system being used. ▪ Where a non-proprietary shoring system is to be utilised, CC shall ensure it is: - L2 - Designed by a qualified structural/civil/geotechnical engineer. - Detailed on For Construction drawings. - Installed by a competent person and verified as correctly installed by the designing engineer prior to use. - Any changes to the design or installed system are to be authorised and signed off by a qualified structural/civil/geotechnical engineer.	WH&S Reg, S305 Excavation CoP, S6	7 Medium

1.5 Work that is carried out on or near pressurised gas distribution mains or piping	Uncontrolled release of substance	16 Severe	▪ Ensure all services (gas, water, sewer, electricity, and telecommunications) are physically located prior to start e.g. 'Dial-Before-You-Dig', 'as built' drawings etc – L2 ▪ Ensure services are isolated, with isolation points clearly identified on drawings and locked out / tagged out ▪ Contact CC site management prior to any isolation of services – L2 ▪ All known services within one (1) meter of the excavation / trench location in a work area are be to progressively exposed by hand (potholed) – L2 ▪ Where strata changes occur or information on services are limited site-specific procedures shall be developed which may include – L2: - Using remote location devices; - Exposing services at sufficient intervals to identify their location and/or lie; - Using gas detectors; - Hand digging, using hand tools with non-conductive handles. ▪ All known HP Gas Lines within two (2) meters of the excavation / trench location in a work area require 'Jemena' or the equivalent to be contacted prior to commencing work for a "services identification for high pressure lines" check to be complete – L3 ▪ Work zones must be demarked and barriers erected according to the site specific needs and tasks – L3 ▪ CC shall develop and maintain a Project Emergency Plan (PEP) and communicate emergency procedures to all. Emergency procedures for Gas Leak are documented Section 10.3 of this PRR – L3	WH&S Reg 2011, S305 Excavation CoP AS 5601 Gas	7 Medium
1.6 Work that is carried out on or near energised electrical installations or services	Electrical Emergency	16 Severe	▪ A Low Voltage Rescue Kit and competent 'Safety Observer' trained in its use [UETTDRRF06B - Perform Rescue from a Low Voltage (LV) Panel] must be available in the immediate area for live low voltage switchboard work and/or high risk testing / fault finding – L2 ▪ CC shall develop and maintain a Project Emergency Plan (PEP) and communicate emergency procedures to all. Emergency procedures for Gas Leak are documented Section 10.7 of this PRR – L3	WH&S Reg 2011, S291 Electrical CoP AS 4836 Low Voltage	7 Medium
	Failure to identify if electrical equipment is energised	16 Severe	▪ Before electrical work is carried out on electrical equipment, the equipment must be tested by a competent electrician to determine whether or not it is energized. Exposed parts should be treated as live until isolated and determined not to be energized – L1 ▪ High Voltage exposed parts must be earthed after being de-energised – L1	WH&S Reg 2011, S291 Electrical CoP AS 3000 Electrical	7 Medium
	Inadvertent re-energisation of de-energised equipment	16 Severe	▪ Electrical equipment that has been de-energized to allow electrical work to be carried out is not to be inadvertently re-energised while the work is being carried out. Workers MUST confirm the isolation prior to cut and re-check prior to carrying out work in the vicinity of the isolated electrical services – L1 ▪ Where a contractors isolation permit doesn't cover assessed aspects in CC's Q030422 Isolation of Electrical Services Permit this will be used by contractors – L3 ▪ Where a contractors energisation permit doesn't cover assessed aspects in CC's Q030423 Electrical Energisation Permit this will be used by contractors – L3	WH&S Reg 2011, S291 and 299 Electrical CoP AS 3000 Electrical	7 Medium
	Electric work on energised electrical equipment	16 Severe	▪ No work is to be carried out on electrical equipment unless: ▪ It is necessary that the electrical equipment to be worked on is energised in order for the work to be carried out properly or for testing purposes; or ▪ It is necessary for the purposes of testing required under clause 155 of the WH&S regulation; or there is no reasonable alternative means of carrying out the work.	WH&S Reg 2011, S291 and 299 Electrical CoP AS 3000 Electrical	7 Medium

	Unauthorised access to equipment while its being worked on	16 Severe	▪ Only authorised persons permitted in the immediate area where electrical work on energized electrical equipment is being carried out – L1 ▪ All workers must be trained and competent to carry out assigned tasks. Licenced electrician on site at all times to supervise works – L3	WH&S Reg 2011, S291 and 299 Electrical CoP AS 3000 Electrical	7 Medium
	Use of inadequate or faulty equipment or procedures	16 Severe	▪ Use of fit-for -purpose tools and equipment that have been properly tested and are maintained in good working order. Inspect prior to each use and remove any faulty equipment from the site – L1 ▪ All workers shall be trained in the correct and safe use of equipment and PPE – L3 ▪ The electrician site supervisor shall be a qualified electrician trained in first-aid and emergency response procedures – L3	WH&S Reg 2011, S291 and 299 Electrical CoP AS 3000 Electrical	7 Medium
	Failure to assess the risks associated with the electrical work	16 Severe	▪ An additional risk assessment is to be completed in consultation with workers if the SMWS does not identify the risk due to site-specific or changed conditions – L1 ▪ Work area shall be cleared of obstructions to allow for easy access and exit – L2 ▪ The point at which the electrical equipment is to be disconnected or isolated from the electricity supply must be clearly marked or labelled, clear of obstructions and capable of being operated quickly – L2 ▪ Competent supervisor on site at all times – L3	WH&S Reg 2011, S291 and 299 Electrical CoP AS 3000 Electrical	7 Medium
	Contact with energised electrical services when working on it with equipment	16 Severe	▪ No work on live power where practicable – L1 ▪ Isolation/Energisation Permit System utilized to verify testing of completion of task to the standard required. No person is authorised to energise power without the completed Permit – L1 ▪ Safe work practices shall be practiced to ensure while electrical work is being carried out on energised electrical equipment, all persons are prevented from creating electrical risks by inadvertently making contact with an exposed energized component of the equipment – L1 ▪ All workers must be trained and competent to carry out assigned tasks. Licenced electrician on site at all times to supervise works – L3 ▪ Dial before you Dig – Refer to current approved excavation drawings – L3	WH&S Reg 2011, S291 and 299 Electrical CoP AS 3000 Electrical	7 Medium

	Electric Shock / electrocution	16 Severe	▪ No electrical equipment should be assumed to be de-energized after isolation. Always test prior to touching using multi-meter – L1 ▪ All electrical circuits isolated must have completed and authorised prior to work commencing a CC Q030422 Isolation of Electrical Services Permit; ▪ All electrical circuits energised must have complete and authorised by CC site management prior to work commencing a CC Q030423 Electrical Energisation Permit; ▪ **Identify** – Clearly identify the electrical equipment to be worked on and the appropriate point of supply. Identification of equipment should include labelling that is both consistent and clear at the equipment to be worked on and all points of possible isolation – L2 ▪ **Isolate** – The electrical equipment to be worked on must be isolated from all sources of supply either by opening switches, removing fuses or switching circuit breakers. Where isolation is effected at a removable or rack-out circuit breaker or combined fuse switch then it should be racked out or removed to provide a visible break for isolation verification – L2 ▪ **Test** – All electrical equipment, unless proven to be de-energised, must be treated as live. Any voltage tests must be conducted between all conductors and between all conductors and earth. Testing must be carried out to confirm isolation by use of a multi-meter – L2 ▪ Multi Metre must be tested for correct operation immediately before use, and again after use to confirm that the instrument is still working – L2 ▪ Switching, isolation or disconnection - Notices must be clearly understandable and where appropriate, signed and dated by all personnel involved in the work. Tags should be only removed with the permission of all the signatories to the tags or if not possible by the signatory's immediate supervisor – L2 ▪ **Lock-off** – All circuit breakers, switches and combined fuse switch units should be locked off where possible. Where fitted locking facilities are not available, temporary securing devices must be used. Securing devices must be able to withstand any disrupting environment – L2 ▪ **Isolation locks / tags** – Locks to be used include: padlocks, lockout stations, lockout kits, circuit breaker lockouts, valve lockouts, plug lockouts, group lock boxes, and safety lockout jaws (sometimes called hasps). Tags to be used where required out of service tags and personal danger tags shall be complete. Isolation/lockout tags shall have plant description, name and contact details of person placing lock/tag isolation, authorise person to remove lock/tag, date, time and signature.	WH&S Reg 2011, S291 and 299 Electrical CoP AS 3000 Electrical	7 Medium
1.7 Work that involves tilt-up or precast concrete	Panel collapsing / falling	16 Severe	▪ Ensure all panels have individual certification – L2 ▪ Minimise personnel in the fall zone of the panel – L2 ▪ Ensure panel is erected in accordance with AS 3850 – L2 ▪ All panels shall have appropriate certificates and markings as per AS 3850, 2.6.2 – L2 ▪ All panels shall have a temporary bracing deign approved as per AS 3850, 6.1 – L2 ▪ All panels shall be installed as per drawings and visually inspected as per AS 3850, 6.2 – L2 ▪ Ensure the Pre-Cast Panel Checklist is completed prior to erection, during erection and prior to removal of bracing – L3 ▪ Obtain approval from CC Foreman before removing temporary braces – L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7 AS 3850 Precast	7 Medium
	Work at Height	16 Severe	▪ Follow Section 13.6 of the Q070302 Project Management Plan – L3 ▪ Manage falling objects / persons in accordance with Working at Heights section of this PRR – L3	WH&S Reg 2011 Falls CoP	7 Medium

	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	Manual Tasks CoP	4 Low
	Frame collapsing / falling	15 Severe	▪ Structural equipment / frames shall have design drawings and/or the WLL marked on them – L2 ▪ Documented on plant / equipment register, including maintenance inspection – L3 ▪ Daily inspection of the wex frames prior to use – L3	WH&S Reg 2011 Plant CoP AS 3850 Precast	4 Low
	Crane Operation	16 Severe	▪ Manage Cranes in accordance with Cranes Section of this PRR – L3	WH&S Reg 2011 Plant CoP	7 Medium
1.8 Work that is carried out is carried out on, in or adjacent to a road or other traffic corridor	Collison with traffic	16 Severe	▪ A site-specific risk assessment must be developed in consultation with stakeholders involved and approved by the Project manager, Site Foreman and Systems Manager. ▪ All work must be isolated from adjacent roads and other traffic corridors using concrete / water barriers; ▪ A suitable temporary traffic management plan (TTMP) must be approved and implemented for the specific scope of works;	WH&S Reg 2011 Plant CoP	7 Medium
1.9 Work that is carried out in an area which there is any movement of powered mobile plant	Collison with mobile plant	16 Severe	▪ A site-specific risk assessment must be developed in consultation with stakeholders involved and approved by the Project manager, Site Foreman and Systems Manager. ▪ A Construction Control Plant Permit is to be completed in Simpel before the plant is used on site – L2 ▪ Ensure access to work areas have clear, even and surface and suitable lighting – L2. ▪ All mobile plant must be fitted with appropriate warning devices – L2. ▪ All reversing trucks must have a spotter – L2. ▪ Before moving into / through a plant operator's zone of influence workers must obtain eye contact and approval by the plant operator. – L2 ▪ Exclusion zone/s shall be maintained around plant operation zone of influence – L2 ▪ Were a SWMS or Plant Design Risk assessment identifies high risk of noise, workers in the immediate area shall wear suitable hearing protection and have area appropriately signposted and isolated – L2. ▪ Risks associated with reversing of the plant are included in SWMS (i.e. reversing alarm, warning devices, spotter etc) – L3 ▪ Plant specific pre-operational maintenance and inspection checklist must be complete – L3. ▪ Where achievable an internal traffic movement plan shall be developed, implemented and communicated to all contractors with appropriate signage displayed onsite and as part of the sites TTMP – L3 ▪ Competent Operator to be verified on the CC S030411 Plant Operations Permit as per the CC Q030409 Inspection and Competency Compliance Matrix – L3 ▪ All workers shall wear appropriate high visibility clothing – L3 ▪ CC shall develop and maintain a Project Emergency Plan (PEP) and communicate emergency procedures to all. Emergency procedures for Vehicle Incident are documented Section 10.9 of this PRR – L3	WH&S Reg 2011 Plant CoP	7 Medium
1.10 Work that is carried out in an area in which there are artificial extremes of temperature	Exposure to extreme temperatures (hot / cold)		▪ A site-specific risk assessment must be developed in consultation with stakeholders involved and approved by the Project manager, Site Foreman and Systems Manager.	WH&S Reg 2011, S291 and 299	

Activity / Item	Hazards / Aspects & Risks / Impacts	Initial Risk Score	Control Measures / Risk Treatment	Legislation, Codes of Practice, and Guidelines (including other available information on hazard / risk)	Residual Risk Score
2. **PROJECT ESTABLISHMENT**					
2.1 Worker Competency	Lack of worker competency	14 Severe	▪ Ensure project personnel are on the Training / Competency Register with competency detailed – L3 ▪ Consultant / Engineer credentials are documented with record available – L3 ▪ All workers competing High Risk Work shall have appropriate licensing or certificate of competency as required by regulatory authorities – L3	WH&S Reg 2011, S39 Construction CoP, S6	7 Medium
	Security – Unauthorised entry site	14 Severe	▪ Ensure site is secure with 1.8m chain-wire fencing to manage interface between public and construction activities – L2 ▪ Ensure gates are monitored and closed wherever possible and locked at end of day – L2 ▪ Ensure appropriate construction signage is displayed at all entry points – L3	WH&S Reg 2011, S298 Construction CoP Work Environment CoP	7 Medium
2.2 Adjacent Structures	Noise disturbance	10 Medium	▪ Adhere to working hours of 7 am to 5 pm Mon-Fri; 7 am to 2 pm Saturday – L1 ▪ Notify adjoining neighbours' of works to be undertaken – L3	WH&S Reg 2011, S59 Environment Protection Reg, Schedule 2	6 Low
	Damage to structures	10 Medium	▪ CC shall ensure dilapidation report is undertaken and controls moving forward where defined are incorporated into Project Emergency Plan, this PRR – L2 ▪ Ensure good line of sight at entry and exit points – L2 ▪ Reversing plant to be managed by a spotter when near workers – L3	WH&S Reg 2011, S298 Construction CoP	6 Low
2.3 Public Interaction	Unauthorised entry	14 Severe	▪ Establish site fencing and access / exit pathways – L2 ▪ Install construction signage on the gate including Construction Control sign, Site Rules, 'Construction Site – Authorised Persons Only' sign, Speed limit sign, Mandatory PPE – Hard hat, Hi-Vis clothing and Safety Footwear, visitor signage directing visitors to site office; after hours contacts, company name, license number and ACN – L3	Construction CoP Work Environment CoP, S2.1	7 Medium
	Exposure to construction hazards	14 Severe	▪ Where working outside the construction boundary work shall be isolated and signposted to prevent public entering areas with a spotter where required – L2 ▪ Weekly work areas inspections to ensure construction works do not exposure the public to moving plant, excessive noise, dust, etc – L3	Construction CoP, S7.1	7 Medium
2.4 Underground and Overhead Services	Unplanned contact with services	14 Severe	▪ Identify all underground services using 'Dial-Before-You-Dig' – L2 ▪ Known services are detailed on site drawings – L3 ▪ Isolate or 'tiger tail' all overhead services within the project – L2 ▪ Where insulated cabling is over areas used by vehicles then the minimum height shall be 4.6 metres – L2	WH&S Act 2011, S305 Construction CoP Excavation CoP	7 Medium

2.5 Access / Egress	Inappropriate access	14 Severe	▪ Ensure designated access & egress paths are even, clear, unobstructed and isolate personnel from vehicles & plant – L2 ▪ Access step heights must not exceed 250 mm (500 mm steps inadequate) – L2 ▪ Ensure visibility around access ways is not blocked inside or outside the fencing – L2 ▪ Ensure access ladders are secured and extend at least 1 metre past the landing area – L2	WH&S Reg 2011, S40 Construction CoP, S7.1 Work Environment CoP, S2.1	7 Medium
	Public entering site	16 Severe	▪ A site-specific risk assessment has determined site fencing requirements as fully fenced with 1.8m chain-wire fencing – L2 ▪ Ensure gates are monitored and closed wherever possible – L2	WH&S Reg 2011, S40 Construction CoP, S7.1	7 Medium
	Obstructed access & egress	12 High	▪ Ensure loading zones don't block access ways – L2 ▪ Where one point of access this shall be a stretcher access to allow emergency services in area – L2	WH&S Reg 2011, S40 Construction CoP	4 Low
	Slips / trips / falls	12 High	▪ Maintain housekeeping at all times – L2 ▪ Ensure designated access & egress paths are even, clear and free of slip / trip hazards – L2	WH&S Reg 2011, S40 Construction CoP	4 Low
2.6 Traffic Control	Vehicular Accidents – Persons/Public, Property	14 Severe	▪ Ensure Internal traffic management plan has been implemented where established – L2 ▪ Ensure good line of sight at entry and exit points – L2 ▪ Ensure a competent Traffic Engineer develops an external traffic management plan in accordance with AS 1742:2010 and have it approved by Local Gov – L2 ▪ Ensure (5) km/h speed signage is displayed at entry points – L3 ▪ Reversing plant to be managed by a spotter when near workers – L3	WH&S Reg 2011, S307 and 315 Construction CoP AS 1742 Traffic	7 Medium
	Incompetent traffic controller	12 High	▪ All temporary traffic controllers, flaggers, spotters on public roads shall have available evidence of completing an appropriate Traffic Controller Course (previously known as Blue Card) and/or Traffic Management Course (previously known as Yellow Card)	WH&S Reg 2011, S40 Construction CoP	4 Low
2.7 Temperature and Environment	Dehydration / Hypothermia	14 Severe	▪ Manage Fatigue and Stress in accordance with Section 2.13 of Project Risk Register – L2 ▪ Ensure cool, clean drinking water is always available – L3 ▪ Provide a cooled / heated amenity sheds – L2 ▪ Ensure workers are provided adequate heat / cold protection – L3 ▪ Drinking facilities are to be located where there is a likelihood of hot and strenuous work activities – L3 ▪ Ensure workers are provided adequate UV protection (work in shaded areas, hat, and sunscreen) – L3	WH&S Act 2011, S40 Construction CoP, S7.1 Work Environment CoP, S2.8	7 Medium
	Heat / Cold Stress	14 Severe	▪ Manage fatigue and stress in accordance with the Temperature & Environment Section of this Q030104 Project Risk Register – L2 ▪ Ensure extreme hot and cold environments are monitored and workers take breaks accordingly – L2 ▪ Supervisors shall minor work and where required rotate or stop work in extreme heat / cold conditions – L2	WH&S Reg 2011, S40 Work Environment CoP, S4.1	7 Medium
	Extreme Wind / Rain / Ice	12 High	▪ CC Foreman to complete the S030202 Environmental Checklist where required to isolate and handover work areas or part of as deemed safe – L2	WH&S Reg 2011, S40	4 Low

2.8 Welfare Facilities (Amenities - lunch-sheds, toilets, etc)	Inadequate amenities	1 High	▪ Ensure cool, hygienic drinking water is always available – L2 ▪ Where a meal room is provided it shall have adequate tables and seating with a floor area of not less than 1m² per person for each person using the room at any one time L2 ▪ Each room shall have a hot water urn, refrigerator, food warming facilities, shelves, sink, garbage bins and air conditioning – L2 ▪ Where showering or the changing of clothes on-site is required, there shall be at least one shower cubicle per 25 persons with a non-slip floor area of 0.5m² per person – L2 ▪ Drinking facilities are to be located where there is a likelihood of hot and strenuous work – L3 ▪ In multi-storey buildings, toilets shall be located on at least every second floor – L3 ▪ The ratio of water closets and hand basins shall be 1:20 males; 1:15 females – L3 ▪ Ensure amenities are installed and maintained in accordance with Work Environmental and Facilities Code of Practice – L3	WH&S Reg 2011, S 41 Construction CoP, S7.2 Work Environment CoP, S3.1 Consultation CoP, S2	4 Low
	Poor / Unauthorised access	14 Severe	▪ Amenities shall have safe means of access at all times – L2 ▪ All amenities are to be locked prior to the closure of site each day or when workers are not on-site – L2	Work Environment CoP, s2.1 & 3.1	7 Medium
	Electrocution / Fire	16 Severe	▪ Ensure electrical supply is in accordance with AS 3012. RCD protection to be isolated with main isolating switch available – L2 ▪ Appropriate fire protection to be available in each amenity shed – L2	Electrical CoP, S3.3 AS 3012 Electrical	7 Medium
	Biological hazards	12 High	▪ Ensure the amenities are kept clean and rubbish removed regularly – L2	Work Environment CoP, S2.2	4 Low
2.9 Workplace Ergonomics	Musculoskeletal Disorders	12 High	▪ Office equipment shall be ergonomically designed – L2 ▪ Screen height should be below eye level and within an arm's length. ▪ When seated at workstation elbows should be at least 50mm above work surface – L2 ▪ Ensure key board, mouse and task materials are within comfortable reach of hands – L2 ▪ Avoid positioning screen directly under light source(s) or facing windows – L2 ▪ Ensure manual handling training has been undertaken – L3	WH&S Act 2011, S40 and 60 Construction CoP Manual Tasks CoP	4 Low
2.10 Latent Conditions	Unidentified hazards	12 High	▪ Complete a Q070407 Latent Conditions Checklist prior to the project commencing ▪ On handover of an area, the Foreman shall inspect the area for needles, asbestos, hazardous substances, and other hazardous conditions using a S030402 Project Inspection Record; and manage accordingly to make safe before work commences – L3 ▪ Prior to each day's work each contractor supervisor / Foreman must complete a site inspection and assessment in relation to scope of works to ensure areas area safe and any potential hazards/risks in work zone area addressed before work commences.	WH&S Act 2011, S40 Construction CoP	4 Low
2.11 Biohazard	Disease / Vermin	9 Medium	▪ All areas shall be kept clean and sanitary – L2 ▪ Waste water from amenities shall be adequately discharged to ensure hygiene and safety – L2 ▪ Ensure adequate supply or cleaning equipment and accessories – L2 ▪ No food shall be consumed in the building – L2 ▪ Adequate measures shall be implemented to deter or eradicate vermin – L2	Construction CoP, S7.2 Work Environment CoP, S3	2 Low

	Used Needles	9 Medium	▪ Don't pick up 'sharps'. Call the sharps hotline (13 22 81) unless you have been trained how to do so safely – L2 ▪ Place needles in a disposal container made for sharps needle end first; contact sharps hotline (13 22 81) for information on disposal – L2 ▪ Take the disposal container to the syringe/needle and ensure positioned on flat surface – L2 ▪ When disposing of needles use tongs or pliers to pick up needles or other contaminated sharp objects and wear disposable waterproof gloves – L3	WH&S Act 2011, S40 Construction CoP Work Environment CoP, S3	5 Low
2.12 Fatigue and Stress	Fatigue / Stress	12 High	▪ Ensure persons working in excess of 55 hours per week "On-site" take a minimum rest break of not less than 30 minutes approximately every three (3) hours for each day. A minimum of an eight (8) hour rest break prior to commencing work on any subsequent day – L2 ▪ Manage Temperature & Environment in accordance with Section 2.8 of this Q030104 PRR – L2 ▪ Pre-employment and ongoing medicals shall be complete to ensure stress is managed appropriately and completed thereafter as required – L3	WH&S Reg 2011, S40 Construction CoP, S7.2 Work Environment CoP, S3	8 Medium
2.13 Violence / Harassment / Bullying	Physical or Mental Harm	12 High	▪ Person affected by drugs or alcohol are not permitted on-site – L1 ▪ There shall be a minimum of (2) workers located at or on the workplace – L2 ▪ No person shall bully another person, bullying includes – L3 - Abusive, insulting or offensive language; - Behaviour or language that frightens, humiliates, belittles or degrades, including criticism; - Inappropriate comments about appearance, lifestyle, sex, sexual preference, religion or their family; - Teasing or regularly making someone the brunt of pranks or practical jokes; - Harmful or offensive initiation practices; and - Physical assault or threats.	WH&S Reg 2011, S40 Bullying CoP	8 Medium
2.14 Isolated Work / Remote Area	Delayed emergency response	14 Severe	▪ On project commencement notification shall be made to emergency authorities, where the project has constant health surveillance requirements or is isolated from emergency services; ▪ A site-specific Project Emergency Plan (PEP) shall be maintained.	WH&S Reg 2011, S43 and 48	7 Medium
	Communication failure	12 High	▪ Communication systems on this project are: Satellite Phone, 3G Phone, 2-way, air-horn siren – L2 ▪ Inspection and testing of communication systems shall be documented in during routine site inspections; ▪ A Project Emergency Plan (PEP) shall detail an effective communication system consisting of: (a) radio communication, (b) landline or cellular telephone communication, or (c) some other effective means of electronic communication that includes regular contact by the employer or designate at intervals appropriate to the nature of the hazard associated with the worker's work. ▪ If effective electronic communication is not practicable at the work site, the employer must ensure that: (d) the employer or designate visits the worker, or (e) the worker contacts the employer or designate at intervals appropriate to the nature of the hazard associated with the worker's work.	WH&S Reg 2011, S43 Construction CoP, S7.4 Work Environment CoP, S4.2	4 Low

2.15 Lone Working	Delayed emergency response	14 Severe	▪ Lone working is to be avoided whenever possible. L1 ▪ If lone working is required, the responsible supervisor must complete a Risk Assessment (or similar) applicable to the task. Suitable controls may include radio contact, mobile phone check ins, regular physical checks, or coordination of tasks to ensure extra persons are in the area. L3	WH&S Reg 2011, S43 Construction CoP, S7.4 Work Environment CoP, S4.2	7 Medium
2.16 First Aid / Medical	Laceration / Puncture / Stabbing	16 Severe	▪ The first aid requirements on this project are a Group (A) first-aid kit – L2 ▪ (1) Qualified Senior First Aider immediately available when workers are on site– L2 ▪ (1) Qualified Senior First Aider, with CPR refresher training completed within the last twelve months – L2 ▪ (1) x Group (A) First Aid Kit – maintained by First Aider – L2 ▪ First Aid Kits shall be in a prominent and quickly accessible location identified with a 'First Aid' sign. Display a photo of the First Aider and contact details on kit– L2 ▪ Trauma kits shall be readily available. – L2 ▪ The Q040202 First Aid Register and Incident Report forms shall be used to record injuries in accordance with the Q070302 Project Management Plan	WH&S Reg 2011, S42 First-aid CoP, S2	7 Medium
	Burn	16 Severe	▪ First-aid kit to have ice pack available – L2 ▪ Where specified by MSDS eye wash facility to be available – L2.	WH&S Reg 2011, S42 First aid CoP	7 Medium
	Inadequate first-aid supplies /	16 Severe	▪ First-aid kit shall be assessed in relation to the nature of the project, work, hazards and workers using CC's S070608 First Aid Checklist complete and reviewed quarterly by a competent first-aider or Emergency Controller – L3 ▪ The Project Emergency Plan, Appendix (I) shall be complete by competent person trained in Workplace Level 2 first-aid and reviewed quarterly to ensure first-aid provisions are adequate – L3	WH&S Reg 2011, S42 First aid CoP	7 Medium
	Incompetent first-aider	16 Severe	▪ The Project Emergency Plan, Appendix (I) shall be complete by competent person trained in Workplace Level 2 first-aid and reviewed quarterly to ensure first-aid provisions are adequate – L3	WH&S Reg 2011, S42 First aid CoP	7 Medium
	Crush	13 High	▪ Location of nearest hospital and local G.P shall be identified and be displayed with first-aid kit and personnel details – L3	WH&S Reg 2011, S42 First aid CoP	5 Low
	Foreign Bodies in Eye	16 Severe	▪ First-aid kit to have eye wash kit available – L2 ▪ Where specified by MSDS eye wash facility to be available – L3	WH&S Reg 2011, S42 First aid CoP	7 Medium
	Bruising / Sprain / Strain	13 High	▪ First-aid kit to have ice pack available – L2	WH&S Reg 2011, S42 First aid CoP	5 Low
	Poisoning	13 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ All hazardous substances shall have a site-specific risk assessment / WMS complete for the products safe use, storage, and disposal –L3 ▪ Where specified by MSDS charcoal tablet to be available in first-aid kit – L3 ▪ MSDS for all Hazardous Substances to be available at first-aid room / kit – L3	WH&S Reg 2011, S42 First aid CoP	5 Low

	Fractures / Dislocation	14 Severe	▪ Assembly point to be positioned so that it: Minimises exposure to traffic/ road crossings; ensures evacuation is outside the zone of influence of structural collapse or explosion; allows for emergency services provisions; factors in location of on-site hazards e.g. hazardous storage, electricity, mains – L2 ▪ Assembly point to be appropriate signage to be displayed - visible and legible; and is approved by the client – L3	WH&S Reg 2011, S42 First-aid CoP	7 Medium
	Unauthorised access	14 Severe	▪ Ensure the Q040202 First Aid Register, First-aid Kit and S040203 Incident Report forms are kept locked away – L2	First-aid CoP, S3.6	7 Medium
	Serious Injury / Illness	16 Severe	▪ Ensure a site-specific Project Emergency Plan is established and reviewed on a quarterly basis – L3 ▪ Ensure emergency details are in accordance with Section 10 of the Project Management Plan – L3 ▪ Commence emergency procedures and Call 000, where required – L3 ▪ Manage First Aid Arrangements in accordance with First Aid Arrangements section of this PRR – L3 ▪ Instigate critical incident management procedure, where required – L3	WH&S Reg 2011, s42 and 43 Construction CoP, S7.3 First-aid CoP	7 Medium
	Medical Delay	15 Severe	▪ Ensure stretcher provisions are available at all times on all working decks to allow safe access / egress in the event of an emergency. – L3 ▪ Work in isolated areas shall be managed in accordance with the Isolated Work Section of this this PRR	WH&S Reg 2011, s42 Work Environment CoP, S2.1	8 Medium
2.17 Health Monitoring and Surveillance	Hazardous Substances Classified under WHS Regs I.e. Asbestos, Isocyanides, Lead, Crystalline Silica, Benzene.	12H	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Complete a Q070407 Latent Conditions Checklist prior to the project commencing ▪ All health surveillance equipment shall be maintained as per manufacturers requirements and where required records of calibration, maintenance and storage available on site as per Section 3.2 of this PRR – L2 ▪ Results of site monitoring shall be available via the project Health Safety Committee; and where near exposure limits, health surveillance and further monitoring shall be complete and additional control measures implemented to reduce levels to a practical level – L2 ▪ Where a worker is exposed or where an assessment indicates a significant risk of exposure health surveillance shall be undertaken – L2 ▪ Risk Assessment conducted by each Sub-contractor shall identify any need for health surveillance. ▪ Where Health Surveillance is identified as required Sub-contractors shall develop and implement a health surveillance policy and procedure ▪ Construction Control will review and monitor this requirement via the Sub-contractor HSEQ Documentation review process in Simpel – L3	WH&S Reg 2011, Division 3.2.7 Haz Chem CoP	4L
	Noise	12	▪ Where a worker is exposed or where an assessment indicates a medium or greater risk of exposure to excessive noise health surveillance shall be undertaken – L2	WH&S Reg 2011, S57 Noise CoP	4L

Activity / Item	Hazards / Aspects & Risks / Impacts	Initial Risk Score	Control Measures / Risk Treatment	Legislation, Codes of Practice, and Guidelines (including other available information on hazard / risk)	Residual Risk Score
3. **DEMOLITION AND EXCAVATION**					
3.1 Location and Isolation of Services (above and below ground	Uncontrolled release of substance	16 Severe	▪ Ensure all services (gas, water, sewer, electricity, and telecommunications) are physically located prior to start e.g. 'Dial-Before-You-Dig', 'as built' drawings etc – L2 ▪ Ensure services are isolated, with isolation points clearly identified on drawings and locked out / tagged out – L2 ▪ Contact CC site management prior to any isolation of services – L2 ▪ All known services within one (1) meter of the excavation / trench location in a work area are be to progressively exposed by hand (potholed) – L2 ▪ All known HP Gas Lines within two (2) meters of the excavation / trench location in a work area require 'Jemena' to be contacted (6203 0600) prior to commencing work for a "services identification for high pressure lines" check to be complete – L3 ▪ Work zones must be demarcated and barriers erected according to the site specific needs and tasks – L3 ▪ All works shall be in accordance with the Excavation Code of Practice – L3	WH&S Reg 2011, S305 Excavation CoP AS 5601 Gas	7 Medium
	Unplanned Contact	16 Severe	▪ Ensure a CC *Q070406 Pre Excavation Form* and *S030425 Excavation Permit* is complete and approved by CC Site Management before work commences and where required asset owner is consulted with to determine any conditions; ▪ Ensure a CC Q070407 Latent Conditions Permit has been completed. ▪ Ensure services remaining live are appropriately identified and protection or exclusion zones documented and communicated to effected parties – L2 ▪ Where strata changes occur or information on services are limited site-specific procedures shall be developed which may include – L2: - Using remote location devices; - Exposing services at sufficient intervals to identify their location and/or lie; - Using gas detectors; - Hand digging, using hand tools with non-conductive handles. ▪ All services are to be considered live unless specifically noted otherwise – L2 ▪ Where practical a 'Q030418 Services Sign Off' sheet shall be used to document isolation and handover of areas – L2 ▪ Manage working with 'live power' in accordance with Electrical Construction Wiring and 4.4 Work on or near energised electrical installations or services sections of this PRR – L3	WH&S Reg 2011, S304 Excavation CoP, S3.5	7 Medium

3.2 Excavation & Trenches	Fall from height – person / object	16 Severe	▪ Barricade excavations at least 1m from edge unless engineer certified handrail able to withstand expected forces is implemented as per Section 3.8 of this Q030104 PRR – L2 ▪ Provide a designated safe means of entry and exit where trenches / excavations exceed 1m in depth – L2 ▪ Handrails around excavation access ways (stairs/ramps) shall have appropriate fall protection on both sides and where falls are greater than 1.8m be engineer certified – L2. ▪ Tools and material to be stored at least 1m back from excavation edge – L2 ▪ Ensure safe, suitable access is provided at all times to work areas – L2 ▪ Excavation machinery must have appropriate edge protection at all times in-place including for routine maintenance and inspections – L2 ▪ Ensure access ladders where used are appropriately secured top and bottom and extend 1m past the landing – L2 ▪ Development of a site-specific emergency and rescue procedure excavations >1.5 meters, which may include (but not limited to) – L3: - development and communication of a warning system; - development and communication of evacuation procedures, including injuries persons; - trained personnel to oversee evacuation and rescue procedures until emergency authorities arrive; - shutting down of work, including plant and services; - provisions for fire fighting and rescue equipment at appropriate locations; - display of evacuation procedures in appropriate location(s) at work site. ▪ Risk assessment for HRW shall identify excavation risk level. Medium to High risk excavations shall have falls, including access / egress managed with Engineering Controls. Low risk excavations shall have falls controlled by other practical means using the 'Hierarchy of Controls'– L3 ▪ CC shall ensure workers in excavations / trenches have available appropriate evidence that they have been trained in trench / excavation collapse emergency procedures – L3	WH&S Reg 2011, Division 6.3.3 Construction CoP Excavation CoP Risk of Falls CoP Plant CoP Work Environment CoP, S2.1	7 Medium
	Hit or crush by equipment	16 Severe	▪ Safety pins to be installed on all excavation attachments – L2 ▪ All plant shall have appropriate reverse signals and auditable alarms. – L2 ▪ All workers, excluding the plant operator, shall be isolated outside the swing area or movement of the plant whilst in operation by physical barricade and signage – L2 / L3 ▪ Manage plant in accordance with Section 3.3 of this Q030104 Project Risk Register - General Use of Plant & Equipment – L3	WH&S Reg 2011, S305 Excavation CoP, S4.3	7 Medium
	Drowning	16 Severe	▪ Ensure excess water is pumped from excavations prior to working in areas – L2 ▪ Ensure safe and practical access is provided to work areas at all times with no exposure to fall zones – L2 ▪ After excessive water stability of excavation is to be reassessed	WH&S Reg 2011, S305 Excavation CoP, S5	7 Medium

	Collapse & engulfment	16 Severe	▪ Bench/batter/shore all excavations exceeding 1.5m, unless otherwise authorized by a Geotechnical Engineers Report ▪ Ensure a CC *Q070406 Pre Excavation Form* and *S030425 Excavation Permit* is complete and approved by CC Site Management before work commences and where required asset owner is consulted with to determine any conditions; ▪ Mobile plant and/or spoil to be positioned at least 900mm away from edge or outside the zone of influence unless a geo-tech report specifies otherwise ▪ Ensure excavation has appropriate controls for the protection against rising, irruption or inrush of water or material – L2. Controls may include (but not limited to): - Implementing isolation measures such as barriers or valves - diverting water or material from open excavation; and/or - Provision of pumps ▪ Monitor excavation for soil instability	WH&S Reg 2011, S305 Excavation CoP, S6	7 Medium
	Asphyxiation	16 Severe	▪ Plant with combustion engines are not to be used in confined excavations without ventilation systems implemented ▪ Monitor area and ensure adequate ventilation within excavation at all times	WH&S Act 2011, S40 Excavation CoP, S4.6	7 Medium
	Existing services	16 Severe	▪ Where practical a 'Q030418 Services Sign Off' sheet shall document isolation and handover of areas. ▪ Works undertaken within 5 metres of a Electrical Utilities Asset (including Evo Energy), must meet the requirements of Electrical Safety Rules as outlined in the Blue Ticket training. Construction Control maintains copies of the relevant documentation and it is available on all projects on request." ▪ Ensure all other services (gas, water, sewer, electrical and telecommunications) are physically located prior to start e.g. 'Dial-Before-You-Dig', 'as built' drawings etc ▪ Manage Existing services in accordance with Location and Isolation of Services and Energisation Sections of this Q030104 Project Risk Register.	WH&S Reg 2011, S304 Construction CoP Excavation CoP, S3.5	7 Medium

	Using excavator as crane	16 Severe	▪ Excavators/Piling Rigs can be used for lifting operations that are described within the plants operational manual. ▪ An excavator operator, completing lifting operations must be trained and competent in the capacity of the particular machine they are operating to conduct lifting operations, before using the machine to complete lifting operations. ▪ Lifting points on the plant are to have SWL indicated and to be certified by the manufacturer or engineer. ▪ Only use attachments identified in the load/lifting chart. A copy of the load chart should be available in the operators cabin. ▪ Ensure site-specific SWMS for High Risk Work and a Plant Risk Assessment is complete and approved before works commences with evidence of prestart review available; – L3 ▪ Manage in accordance with the Use of Plant & Equipment – General, Section of this Q030104 PRR; – L3 ▪ Plant must not enter the excavations zone of influence. ▪ Lifts should be planned to minimise personnel in the lifting zone. ▪ Where the rated capacity of earthmoving equipment exceeds 1 tone Burst Protection must be fitted to both boom and dipper arm of the equipment used as crane – L2 ▪ If the applicable plant does not have burst control fitted, SWMS needs to include measures that ensure workers are well clear of plant and load in the event of a hydraulic failure – L2 ▪ Foundations shall be suitably prepared and compacted to support specified loading requirements. – L2 ▪ Ensure a Daily Plant Checklist is completed – L3 ▪ No lifting over public without traffic management in place to prevent public entering area/s concerned. ▪ Do not lift materials over workers and/or sheds. Coordinate onsite works and crane operations to prevent. Where impractical appropriate 'Class C' hoarding shall be implemented – L2. ▪ Ensure erection and dismantle methods for lifting operations are documented, including method of using certified lifting points. – L3 ▪ Plant Operator has ultimate responsibility to ensure the plant is fit-for-purpose – L2 ▪ Manage Lifting Equipment in accordance with the Lifting Equipment , Section of this Q030104 PRR – L3 ▪ A certified Rigger or Dogman must chain / sling the load. Plant operator cannot be the Dogman / Rigger. – L2 ▪ Exclusion zones must be in place to isolate the plant from pedestrians/workers. – L3 ▪ Lifting operations not described in the plants operational manual is considered to be a Slewing Crane operation and the relevant HRWL is required before this type of lifting is conducted. In this instance the following items need to be completed: o Ensure the *S030411d Mobile Crane Operation Permit* is completed prior to using the plant as a crane: – L3 o Ensure Operator has a HRWL certified to the crane capacity and monitor wind speeds and loading – L3	WH&S Reg 2011, S304 Plant CoP Excavation CoP, S4.3 AS 2550 Cranes AS 4991 Lifting devices, S15	7 Medium

3.3 Drilled or Driven Piers (Set-up and use of drill rigs for foundation piers)	Noise	12 Hight	▪ Keep personnel 1.5m clear of operating rig. Minimise personnel in vicinity of rig – L2 ▪ CC Plant Operational Permit must be complete to verify key aspects including design assessments, operator competency, plant specific pre-operational inspection and maintenance complete – L3. ▪ Ensure rig operators are wearing ear protection – L3.	WH&S Reg 2011, S57 Noise CoP Plant CoP	
	Falls into pier hole	16 Severe	▪ Suitable edge protection shall be installed as per Section 3.8 of this PRR; or excavation shall be appropriately isolated 2m to avoid exposure – L2. ▪ Ensure holes are secured before removing rig – L2: - At completion of each hole, raise rig 300mm above all pier holes and cover immediately before moving rig; or - Install cage / guard before drilling or removal of rig. ▪ Ensure site-specific SWMS for High Risk Work and Risk Assessment is complete and approved before works commences with evidence of prestart review available –L3	WH&S Reg 2011, S79 Excavation CoP, S4.4 Falls CoP, S3	
	Entrapment in rig	16 Severe	▪ All excavating machinery must be fitted with compliant protective structures TOPS/ROPS/FOPS as per CC's Q030409 Inspection & Competency Compliance Matrix – L2 ▪ No loose clothing to be worn. Tie long hair back – L2	WH&S Act 2011, S40 Plant CoP	
	Rollover	16 Severe	▪ Ensure excavation is level enough for Pier Rig – L2 ▪ Plant shall be operated outside the zone of influence unless engineer geo-technical report advises– L2. ▪ Manage plant in accordance with 'General Use of Plant & Equipment' of this Q030104 Project Risk Register – L3	WH&S Reg 2011, S305 Excavation CoP, S4.3	
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Sections 8.04 Materials Handling & 8.05 Manual Handling of this Q030104 Project Risk Register	WH&S Reg 2011, S60 Manual Tasks CoP	
	Damage to adjacent structures	16 Severe	▪ Ensure calibration records are verified for specific drill rig operation and approved drawings are available and in-use by drill-rig operator ▪ Ensure a dilapidation report on all buildings / structures with zone of influence is complete and control measures defined within are implemented ▪ Levels to be verified as per 'for construction' drawings where drill-rig is repositioned to ensure plant has correct angle and is in correct area ▪ Ensure operator has appropriate evidence of competency for drill-rig	WH&S Act 2011, S40 Plant CoP	
	Damage to adjacent structures	16 Severe	▪ Complete a dilapidation report/engineering advice on all buildings / structures within the zone of influence – L2 ▪ Ensure consultant has complete explosives management plan to be submitted to WorkSafe for approval – L3	WH&S Reg 2011, S297 and 142 AS 2187.2: Explosives	
3.4 Explosives	Damage to adjacent structures	16 Severe	▪ Complete a dilapidation report on all buildings / structures with zone of influence ▪ Ensure consultant has complete explosives management plan to be submitted to WorkSafe for approval	WH&S Reg 2011, S297 and 142 AS 2187.2: Explosives	
	Noise / Vibration	12 Hight	▪ Consult with all surrounding building managers / owners and other effected by works	WH&S Reg 2011, S297 AS 2187.2: Explosives	

3.5 Shotcreting walls of Excavations	Work at Height – Falling object / person	16 Severe	▪ Isolate the area affected by the shotcreting ▪ Ensure the hopper guard is down when in operation ▪ Ensure eye and ear protection, protective gloves are worn	WH&S Reg 2011, S297 Construction CoP, S7.5	7 Medium
	Collapse	12 High	▪ Where concrete panels, shotcrete, piers, anchors, and/or capping beams etc. are used to prevent collapse during construction, CC shall ensure it is: - L2 - Designed by a qualified structural/civil/geotechnical engineer; - Detailed on For Construction drawings; - Installed by a competent person and verified as correctly installed by the designing engineer prior to use. - Any changes to the design or installed system are to be authorised and signed off by a qualified structural/civil/geotechnical engineer.	WH&S Reg 2011, Division 6.3.3 Construction CoP Excavation CoP	4 Low
	Noise	12 High	▪ Area to be isolated and specific hazards sign-posted surrounding immediate area. ▪ Workers in immediate area to wear suitable hearing protection. ▪ Manage Plant & Equipment in accordance with Use of Plant & Equipment - General section of this PRR	WH&S Reg 2011, S57 Noise CoP	4 Low
	Slips / Trips / Falls	12 High	▪ Areas must be isolated with physical barricading and appropriate warning signage ▪ Housekeeping in areas must be maintained at all times	WH&S Reg 2011, S40 Construction CoP, S7.1	4 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this Q030104 PRR	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
	Pump failure / collapse / explosion	16 Severe	▪ Ensure operator is appropriate competency to operate plant and equipment ▪ Ensure all line clips are installed. ▪ Ensure pump and line are inspected and maintained as per manufacturer guidelines to prevent air system failure ▪ Ensure plant specific pre-operational inspection checklist is complete prior to operation. ▪ Manage Plant & Equipment in accordance with Use of Plant & Equipment - General section of this PRR	WH&S Reg 2011, S203 Plant CoP	7 Medium
	Hazardous Substance	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required	WH&S Reg 2011, S49 Haz Chem CoP	4 Low

Activity / Item	Hazards / Aspects & Risks / Impacts	Initial Risk Score	Control Measures / Risk Treatment	Legislation, Codes of Practice, and Guidelines (including other available information on hazard / risk)	Residual Risk Score
4. **PLANT AND EQUIPMENT**					
4.1 Labour Hire	Incompetent worker	14 Severe	▪ S080302 Acquisition Assessment to be complete prior to hire of goods / services / plant / equipment – L3 ▪ Risks associated with hire arrangements are included in site-specific WMS – L3 ▪ All workers competing High Risk Work shall have appropriate licensing or certificate of competency as required by regulatory authorities – L3	WH&S Reg 2011, S39 Consultation CoP Construction CoP, S6	7 Medium
4.2 Calibration	Inaccurate Inspection, Measuring, Test Equipment (IMTE)	12 High	▪ Ensure all IMTE is recorded on the Business Management System (BMS) Plant Register, with calibration timeframes documented – L2 ▪ Visually check all IMTE prior to each use to ensure it is in calibration dates and is not damaged or broken ▪ All IMTE must be identifiable with serial number and have available onsite records of calibration and maintenance and appropriate storage – L2	WH&S Reg 2011, Part 4.7 Electrical CoP ISO 9001 QAMS	4 Low
4.3 Use of Plant & Equipment – General Examples: - Forklift / Telehandler - Loader / Excavator - Lifting equipment - Scissor lift - Hoists - Thread-cutter - Industrial Lift Trucks - Vehicle Loading Cranes	Unidentified Plant	12 High	▪ Items of plant listed under Schedule 5.1 of the WH&S Regulation must have design registration with WorkSafe complete. The operator must ensure the Plant Item registration number is permanently marked on the item of plant in a visible place – L2. ▪ Plant shall be used as per operators manual and stored in designated areas as directed by Foreman. Plant should be positioned as not to create additional risks or block access (600 mm) – L2 ▪ S080302 Acquisition Assessment to be complete prior to purchase / hire – L3. ▪ A S030411 Plant Operations Permit for all major plant to be approved by CC prior to start of works. Major plant is EWP, Crane, Concrete Pump, Forklift/Telehandler, Earthmoving Equipment and powered mobile plant that can't be carried by hand. ▪ Items of plant listed under Schedule 5.2 of the WH&S Regulation must be registered with WorkSafe– L3.	WH&S Reg 2011, S203 and Schedule 5 Plant CoP, S5	4 Low
	Plant Failure - collapse / fire / explosion	12 High	▪ In-service Fire Extinguisher to be located in cabin of high risk plant as per operators' manual – L2. ▪ Plant identified as defective shall be isolated and where required locked to prevent use as per Construction Controls 3.05 Out of service Procedure – L2. ▪ Plant specific pre-operational maintenance and inspection checklist must be implemented. ▪ Routine maintenance must be documented and provided prior to start	WH&S Reg 2011, S213 Plant CoP, S3.6 and 3.7 AS 2550 Cranes AS 1418 Cranes	4 Low
	Hazardous substances	15 Severe	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Only electric powered plant shall be operated in confined spaces. ▪ Ensure adequate ventilation at all times for LPG and fuel powered plant and machinery	WH&S Reg 2011, S206 Plant CoP	8 Medium
	Slip / trip / fall	16 Severe	▪ Plant specific pre-operational maintenance and inspection checklist must be complete. ▪ Ensure access to work areas have clear, even and surface and suitable lighting	Plant CoP, S10.2	7 Medium

	Exposure to moving parts	16 Severe	▪ All safety guarding and devices must be operational and in use on plant and machinery (specifically any plant / equipment with abrasive wheel machinery and/or other rotating parts) – L3; ▪ Any plant / equipment with safety guarding missing / defective shall be removed from site and/or locked/tagged out to prevent use – L3.	WH&S Reg 2011, S203 and Schedule 5 Plant CoP, S5	7 Medium
	Rollover / Falling objects	12 High	▪ Where specified by the OEM Manual or plant risk assessment an appropriate operator protective structures TOPS/ROPS/FOPS fitted compliant with CC's Q030409 Inspection & Competency Compliance Matrix or otherwise assessed with legible compliance plate ▪ All earthmoving machinery >1.5T must be fitted with appropriate ROPS / FOPS	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	4 Low
	Work at Height	16 Severe	▪ All earthmoving machinery must be fitted with appropriate fall prevention systems ▪ Manage Work at Height in accordance with Sections 3.8 Edge Protection and Section 9.7 Working at Heights of this Q030104 PRR	WH&S Reg 2011, S217 Falls CoP	7 Medium
	Incompetent Use / Operator	16 Severe	▪ Competent Operator to be defined in SWMS / Risk Assessment for use of plant / equipment; ▪ Manufacturer's operator's manual for plant to be available on-site at all times ▪ Competent Operator to be verified on the CC S030411 Plant Operations Permit as per the CC Q030409 Inspection and Competency Compliance Matrix ▪ Workers using hand equipment / tools shall be deemed competent by their immediate supervisor prior to use. Evidence of training in specific hand tools and equipment shall be maintained per contractor.	WH&S Reg 2011, S39 and 206 Plant CoP, S3.3	8 Medium
	Collision with people / property	16 Severe	▪ All mobile plant must be fitted with appropriate warning devices. ▪ All reversing trucks must have a spotter. ▪ Risks associated with reversing of the plant are included in SWMS (i.e. reversing alarm, warning devices, spotter etc)	WH&S Reg 2011, S214 and 215 Plant CoP, S4.4	7 Medium
	Noise / Vibration	12 High	▪ All appropriate guarding shall be maintained on plant./ equipment to isolate noise sources; ▪ Where a SWMS or Plant Design Risk assessment identifies a medium to high risk of noise, workers in the immediate area shall wear suitable hearing protection and have area appropriately signposted and isolated; ▪ Plant design risk assessment for all major plant (crane, excavators, etc); ▪ Inspection and maintenance records to be provided prior to start.	WH&S Reg 2011, S57 and 204 Plant CoP Noise CoP	4 Low
4.4 Lifting Devices Examples: - Bins - Steel fixing Stands - Slings - Chains - Lifting boxes / bags	Inadequate inspection - Equipment failure	12 High	▪ All lifting devices must be inspected prior to use and formally on a routine basis specified by the manufacturer, in absence, at weekly intervals by an Intermediate Rigger as per Section 13.8 of the Project Management Plan (PMP). ▪ Lifting devices must have appropriate markings and stamped or tagged with Working Load Limits (WWL) or Safe Working Load (SWL) ▪ All lifting devices must be documented on a lifting gear or plant / equipment register with details of inspection dates, certification results and any repairs for each lifting device, including the crane hook and block, slings / chains, stands and any lifting attachments or lifting boxes/bags. Registers must evidence that individual lifting devices are within the annual inspection requirements under AS 4991 – L3. ▪ All Lifting devices shall be provided with all applicable information as per Section 13.8 of the Project Management Plan.	WH&S Reg 2011, S54 and 214 Plant CoP Construction CoP, S7.6 AS 4991:2004, S15.1.3 AS 4991:2004, S13.1 AS 4991:2004, S13.8	4 Low

	Incompetent operator / inspector	12 High	▪ All chaining / slinging loads without certified lifting points shall be carried-out by a qualified dog-man or under an authorised log-book (operator cannot be supervisor). ▪ Workers inspecting lifting devices shall have appropriate instruction & training as per AS 4991:2004	WH&S Reg 2011, S39 Construction CoP AS 4991:2004, S13.1	4 Low
	Inadequate maintenance	16 Severe	▪ All lifting devices shall have evidence of annual Proof Load Testing or Non Destructive Test (NTD) certification results.	AS 4991:2004, S15.1.4	7 Medium
4.5 Temporary support structures	Equipment failure	16 Severe	▪ All lifting devices must be inspected prior to use and formally on a routine basis specified by the manufacturer, in absence, at weekly intervals by a Basic Rigger.	WH&S Reg 2011, S54 and 214 Plant CoP	7 Medium
4.6 Elevated Work Platforms (EWP) Examples: - Scissor-lift - Boom-lift - Pole-cat	Inadequate inspection	12 High	▪ EWP shall have routine inspection and maintenance verified by completion of the CC S030411a EWP Plant Operations Permit ▪ EWP shall have a plant specific pre-operational inspection and testing checklist complete prior to operation. ▪ For boom-lift operation the following must be verified prior to fall-arrest equipment use: - Daily inspection is completed prior to operation of the EWP and fall-arrest equipment; - Appropriate training has been complete by all workers involved [as per the CC Q030407 Fall-arrest equipment Permit and Q030409 Inspection Compliance Matrix] - Appropriate maintenance records available as per manufacturer instructions for fall-arrest equipment [as per the CC Q030409 Inspection Compliance Matrix].	WH&S Reg 2011, S214 Plant CoP, S3 AS 2550.10 EWP AS 1891.4 Fall-arrest	4 Low
	Work at Height – Falling object / person	16 Severe	▪ EWP shall be used only as per manufacturer's instructions. ▪ Manage Work at Height in accordance with Sections 3.8 Edge Protection and Section 8.4 Working at Heights of this Q030104 PRR. ▪ Operator manual shall be available at all times ▪ Manage Working at Heights in accordance with Section 3.8 Edge Protection and Section 8.4 Working at Heights of this Q030104 PRR	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7 Construction CoP, S7.6	7 Medium
	Plant Failure	14 Severe	▪ All Plant shall have plant design risk assessment verified via the CC Plant Operational Permit. ▪ Any modifications to the EWP shall be engineer approved with certification readily available.	WH&S Reg 2011, S39 Plant CoP	7 Medium
	Operator competency	12 High	▪ Operators of EWP must hold an appropriate record of competency for specific plant as per the CC Q030409 Inspection and Competency Compliance Matrix and S030411a EWP Plant Operations Permit/	WH&S Reg 2011, S39 Plant CoP	4 Low
	Personnel hit by plant	16 Severe	▪ Ensure a clear area of operations – isolate if pedestrians are likely to enter area ▪ All mobile plant must be fitted with appropriate warning devices ▪ No person other than the operator rides on the plant unless the person is provided with a level of protection that is equivalent to that provided to the operator	WH&S Reg 2011, S215 Plant CoP, S4.4	7 Medium
	Rollover	16 Severe	▪ Check path before driving EWP over rough or new ground ▪ All open edges voids, excavations, trenches shall be appropriately isolated to prevent exposure to fall zones – L2. ▪ EWP shall be used only as per manufacturer's instructions	WH&S Reg 2011, S214 Falls CoP, S4.1	7 Medium

4.7 Scaffold Erection & Dismantle	Scaffold collapse	16 Severe	▪ Scaffolds should be built as per the manufacturer's instruction manual. - L2 ▪ AS 4576 describes scaffold as Large or Small. ▪ Construction Control defines a Small Scaffold as: o Handrails under 4m o A free standing access scaffold o Scaffold under 4m to the highest working deck ▪ Small scaffold can be built by a person holding a scaffold HRWL, built as per the manufacturer's instruction manual or to a clear sketch. - L2 ▪ Construction Control defines Large Scaffold as all scaffold more complex than described above in Small Scaffold. ▪ The requirements for Large Scaffold are: - L2 o Design drawings developed by a suitably qualified Scaffold/Structural/Mechanical Engineer prior to scaffold works commencing on site is provided to CC by the scaffolding Sub-contractor. o The Scaffold Drawing is kept up to date by the qualified scaffolder. o Adjustments to the original Scaffold Drawings required to meet site conditions, that are in line with the manufacture's instruction manual can be certified by a qualified scaffolder with a Scaffold Handover Certificate. o Adjustments to the original Scaffold Drawings required to meet site conditions, that are **not** in line with the manufacture's instruction manual require the approval of a suitably qualified Scaffold/Structural/Mechanical Engineer. o Large Scaffold must be erected / dismantled by a qualified scaffolder holding a scaffold HRWL; ▪ Install protection where scaffold is likely to be hit by plant; - L2 ▪ Ensure component list / description, instructions, maintenance and inspection regime, details of Working Load Limits (WLL) and other information on loading, max heights and working platforms is provided; - L2 ▪ A 'Scaff-Tag' shall be placed at each access point of the scaffold, detailing the Qualified Scaffolder inspecting, duty loading and date of initial hand-over & subsequent inspections; - L2 ▪ Ensure ties are installed as per manufacturers instruction manual. - L2 ▪ All Scaffold components manufactured post 2009 shall be appropriately marked with supplier and system type. - L2 ▪ In the event of weather extremes, the scaffold shall be closed to workers. Once the event has passed, before reopening, the scaffold shall checked and re-certified by a qualified scaffolder holding a scaffold HRWL. In the absence of any weather extremes, scaffolds shall be re-certified monthly; - L2 ▪ Foundations shall be suitably prepared and compacted to support specified loading requirements with compaction testing results available; - L2 ▪ Where possible all sole boards shall be at least 225mm wide and long enough to support at least two standards. - L2 ▪ No scaffold to be modified unless authorised by CC. - L2	WH&S Reg 2011, S79 and 225 Falls CoP AS 1576 Scaffold AS 4576 Scaffold	7 Medium

	Falls from height	16 Severe	▪ Ensure a sequential erection or [1] metre rule method is used in accordance with AS 4576 and 'WorkSafe Guide to Scaffolding Safety'; L2 ▪ Gap between scaffold and building horizontally to be no greater than 225mm; scaffold floor to be to be no greater than 300mm vertically from structure platform; L1 ▪ Scaffold planks must have a 300mm overlap or be secured / lashed. L2 ▪ No person other than a scaffolder is permitted on a scaffold or part thereof until such time it has been certified to AS 1576 using a handover certificate including the erector's signature and competency – L3; ▪ Handrail (900mm), mid-rail (500mm) and toe-boards (150mm), or mesh screens incorporating kick-plates shall be provided where a person or object could fall a distance of 2m or more – L2	WH&S Reg 2011, S79 and 225 Falls CoP AS 1576 Scaffold AS 4576 Scaffold	7 Medium
	Falling objects	14 Severe	▪ Where there is a potential for an object to fall into public space supporting a road, foot path or structure, full enclosure screening shall be installed on each scaffold face affected to a minimum height [2] metres above the last working deck – L2; ▪ Upon handover scaffold shall not be opened to other persons until a CC S030414 Scaffold Checklist has been complete by a competent person to verify installation as per drawings – L3; ▪ Internal guardrails to be installed on the scaffold where a fall may be greater than 1.8m – L2	WH&S Reg 2011, S79 and 225 Falls CoP AS 1576 Scaffold AS 4576 Scaffold	7 Medium
	Access & Egress	12 high	▪ Follow Section 1.03 of the Q070302 Project Management Plan – L3. ▪ Ensure openings in edge protection at points of access to stairways or ladders are adequately protected with gates or distant from working platforms – L2; ▪ Ensure suitable access to all scaffold, with materials stored to allow access through decks at all times ▪ Access step heights must not exceed 250mm. (500 mm steps inadequate) – L2; ▪ Fixed or under construction stairways require appropriate handrail / mid-rail – L2. ▪ Stairways 1.0 m in width or greater shall have secure handrails on both sides at 900 mm height – L2; ▪ Ensure stretcher provisions are available at all times on all working decks to allow safe access / egress in the event of an emergency – L2; ▪ Ensure access ladders are secured and extend at least [1] meter past the landing area – L2.	WH&S Reg 2011, S79 Falls CoP Work Environment CoP, S2.1 AS 1576 Scaffold AS 4576 Scaffold	4 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this Q030104 PRR – L3.	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
4.8 Mobile Scaffold	Scaffold collapse	16 Severe	▪ Mobile scaffold shall be erected and used as per AS/NZS 1576 & 4576 and/ or manufacturer's specifications – L2. ▪ All mobile scaffolds over 4m shall only be erected and dismantled by a qualified scaffolder as per the *Q030409 Inspection Compliance* Matrix – L3 ▪ All mobile scaffolds under 4m shall be erected and dismantled by a competent person as per the *Q030409 Inspection Compliance* Matrix – L3 ▪ Erected mobile scaffolds are to be reviewed on a regular basis during site walks, S030402 Project Inspection Records and S030413 Work Activity Observations. The S030401 Mobile Scaffold Checklist may be used to monitor and review the safe erection and used of mobile scaffolds – L3 ▪ A mobile scaffold shall be visually inspected on a daily basis by the person using it prior to use – L3.	WH&S Reg 2011, S225 AS 1576 Scaffold AS 4576 Scaffold	7 Medium

	Work at Height – Falling object / person	16 Severe	▪ Do not locate a mobile scaffold closer than (1) metre to any unprotected edge or penetration, unless measures are used to prevent it crossing that point, such as a fixed fence, rail or suitably high ridge – L2. ▪ No worker is permitted to remain on a mobile scaffold while it is moved – L1; ▪ Guardrails and toe boards, or mesh screens incorporating kick-plates shall be provided where a person or object could fall a distance of 1.8 metres or more – L2	WH&S Reg 2011, s54 and 79 Falls CoP AS 1576 Scaffold AS 4576 Scaffold	7 Medium
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Manual Handling section of this PRR – L3;	Manual Tasks CoP	4 Low
	Access & Egress	12 High	▪ Ensure access ladders are secured and extend at least (1) meter past the landing area – L2; ▪ All castors must be in the "locked" position prior to any person accessing a mobile scaffold – L2;	WH&S Reg 2011, S40 WSACT GN 0025 Scaffolding	4 Low
4.9 Temporary edge protection	Work at Height – Falling object / person	16 Severe	▪ Appropriate edge protection must be installed at all times. At 1.8 metres this shall include handrail (900 mm), mid-rail (500 mm) and toe boards (150 mm), or mesh screens incorporating kick-plates of a solid construction shall be provided – L2. ▪ Temporary edge protection must be registered with inspection and maintenance frequencies defined – L2. ▪ Temporary edge protection that is intended to protect persons working on roofs of buildings having slopes not greater than 35° must be engineer certified to comply with AS 4994 – L2. ▪ Temporary edge protection including formwork and excavation handrails must be of a solid construction and be inspected / verified as per manufacturers / engineers specifications – L2.	WH&S Reg 2011, S54 Falls CoP, S4.2 AS 4994 Temporary edge protection	7 Medium
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this Q030104 PRR – L3.	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
4.10 Builders Lifts	Mechanical failure		▪ Ensure the lift has been registered, tested and authorized for service by WorkSafe – L2 ▪ Notice is fixed in the car giving the following instructions and information in letters and numerals of size 25 mm – L2 - This lift is for general goods loading only - Capacity of this lift: [?] kg's - Industrial forklift trucks shall not be used for loading this lift - The weight of any single good shall not exceed: [?] kg's (1/4 lift capacity) - Person authorised to operate this lift: [?] ▪ 24 hours emergency telephone line has been provided in the lift car and which is serviced by lift installer. If telephone connection cannot be provided because of some genuine reason, then two way radio or intercom must be provided from lift car to site office and a procedure for calling in a lift technician in the case of an emergency is put in place. The lift should not be operatable when an emergency contact is not available – L3	WH&S Reg 2011, S37 and 203 Plant CoP, S1.5 and 3.7 WSACT GN 0026	
	Poor access		▪ Clear access / egress from the builders lift shall be maintained at all times – L2 ▪ The interior of the car is lined with plywood or any other soft impact absorbing material to prevent damage to the car while loading materials and the floor of the car is covered with timber planks or with 10 mm thick plywood to evenly distribute the load on floor – L2	WH&S Reg 2011, S204 Plant CoP, S3.2	
	Incompetent operator		▪ The lift must only be operatable by a person trained and authorised by CC Site Management. A ticketed hoist driver can be designated as the person authorised to operate the lift– L3. ▪ Ensure appropriate information is provided to the builders lift operator to ensure safe operation – L3.	WH&S Reg 2011, S39 Construction CoP Plant CoP	

	Unauthorised use		▪ Lifts shall be isolated / locked when not in use to prevent unauthorised operation – L2	WH&S Reg 2011, S203	
	Manual Handling		▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this Q030104 PRR – L3	Manual Tasks CoP	
4.11 Man & Materials Hoists	Work at Height – Falling object / person	16 Severe	▪ Materials Hoists to have overhead protection for operator – L2 ▪ 'no-go zones' where objects may fall must be established and maintained – L2. ▪ Must have overhead protection for operator. No worker shall be allowed to work beneath materials that are being lifted – L2 ▪ Ensure the hoist is suitably tied in to the building – L2 ▪ Must be guarded with mesh or similar at each floor to prevent contact with moving parts – L2	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7 Construction CoP, S7.6	7 Medium
	Mechanical failure	12 High	▪ Must be installed as per designers, manufacturers and suppliers instructions / specifications and by an Intermediate Rigger or Intermediate Scaffolder – L2 ▪ Upon installation a 'handover' certificate must be provided to certify compliance with AS1418.1, AS1418.7 and the site-specific design – L2 ▪ Load Rating must be displayed inside the hoist – L3 ▪ Must have an appropriate electrical supply, which is marked and secured – L2 ▪ Must be serviced on a monthly basis with evidence provided – L3	WH&S Reg 2011, S207 Plant CoP, S3.7 AS 2550.7 Hoists AS 1418.1 Hoists	4 Low
	Poor access	12 High	▪ Clear access / egress from the builders lift shall be maintained at all times – L2 ▪ Must have adequate lighting – L2	Work Environment CoP, S2.1	4 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this Q030104 PRR – L3	Manual Tasks CoP	4 Low
	Incompetent operator	12 High	▪ Lifts shall be isolated / locked when not in use to prevent unauthorised operation – L2 ▪ Must be operated by a competent person with a national certificate of competency for the specific hoist ▪ Materials platform hoist (cantilever platform) requires a (HM) High Risk Work licence – L3 ▪ Man hoist (personal and material) requires a current (HP) High Risk Work licence.	WH&S Reg 2011, S39 Construction CoP Plant CoP	4 Low
4.12 Formwork Erection & Dismantle	Formwork Collapse	16 Severe	▪ Ensure Formwork Design Plans are obtained – L2 / L3 ▪ Ensure engineers credentials are stored in file 10 Scaffold and Formwork and are included on the Concrete Placement Checklist – L2 / L3 ▪ Ensure a documented inspection of materials to be used is to be completed by Formworker prior to installation and forwarded to CC – L3 ▪ Formwork shall be erected, stripped and back-propped by competent persons and in accordance with AS/NZS 3610 – L2 ▪ Ensure CC's Concrete Placement Checklists are completed prior to pour – L3 ▪ Ensure CC's Pre Strip Checklist is completed prior to stripping – L3 ▪ Ensure formwork is not braced against other structures unless detailed authorisation is provided by a structural engineer – L2 ▪ Shutter supports shall have engineered design drawings and/or WLL marked – L2 / L3	WH&S Reg 2011, S217 Formwork CoP, S4 AS 3610:1995 Formwork AS 3610.1:2010 Formwork Documentation	7 Medium

	Work at Height – Falling object / person	16 Severe	▪ Ensure that at no time are workers exposed to a fall exceeding 1.8m – L2 ▪ Guardrails and toe boards, or mesh screens incorporating kick-plates shall be provided where a person or object could fall a distance of 1.8 metres or more. – L2 ▪ Where the height above the ground is greater than 1.8 metres and a leading edge is unguarded, a continuous physical barrier shall be installed with appropriate "No access" signage at a distance of not less than (2) metres. – L2 ▪ Ensure the leading edge is protected by additional joists (lazy joists), nets, guardrails or similar– L2 ▪ Additionally, where work is carried out on a leading edge there shall also be suitable barriers and signage installed on the level immediately below at a distance not less than (2) metres from the workface to prevent entry by persons not involved; – L2 ▪ Ensure minimum 2 planks (450mm wide) are used when working from temporary working decks. These must extend at least 150mm over each frame; – L2 ▪ All temporary props installed on the project are to be effectively secured top and bottom to prevent dislodgement – L2	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7 Formwork CoP, S4 Construction CoP, S7.6 AS 3610.1:2018 Formwork	7 Medium
	Access & Egress	12 High	▪ Ensure formwork decks shall have safe and suitable access and egress – L2 ▪ Ensure access ladders are secured and extend at least 1 meter past the landing area – L2 ▪ Housekeeping must be maintained – L2	WH&S Reg 2011, S40	4 Low
	Explosive Power Tools	13 High	▪ Manager explosive power tools in accordance with the Explosive Power Tools, Section of this PRR.	WH&S Reg 2011, S217	5 Low
	Manual Handling	13 High	▪ Manage Manual Handling in accordance with Manual Handling section of this Q030104 PRR. – L3 ▪ Erect bearers from underneath the working deck; – L2	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
4.13 Crane set-up, commission and operation - Mobile Crane - Tower Crane	Crane failure / collapse	16 Severe	▪ Ensure a Q070409 Designated Plant Setup Location form has been completed and a copy of the completed document and applicable drawings available for consideration by the site team and crane crew. ▪ Ensure site-specific SWMS for High Risk Work and Risk Assessment is complete and approved before works commences with evidence of prestart review available; – L3 ▪ Manage in accordance with the Use of Plant & Equipment – General, Section of this Q030104 PRR; – L3 ▪ The zone of influence around the base of the Crane should be isolated / signposted. Lifts should be planned to minimise personnel in the lifting zone; – L2 ▪ Foundations shall be suitably prepared and compacted to support specified loading requirements with compaction testing results available. – L2 ▪ Ensure the below listed crane planning and set-up checklist and permits are completed by the CC staff member responsible for the works in consultation with the crane crew prior to crane setup: – L3 Mobile Crane = 1st visit to site S030411b Mobile Crane Operation Permit 2nd visit to site S030404 Mobile Crane Setup Checklist Tower Crane = Q030411c Tower Crane Operation Permit ▪ Ensure a Daily Plant Checklist is completed – L3	WH&S Reg 2011, S203 Plant CoP, S3.7 AS 2550 Cranes	7 Medium
	Public / Pedestrians	16 Severe	▪ The base of the Crane should be isolated to at least 3m around the Crane – L2 ▪ 'Crane Operation Area' warning signage must be displayed in immediate area – L3	WH&S Reg 2011, s203 AS 2550 Cranes	7 Medium

	Incompetent operator / Incorrect lifting processes	16 Severe	▪ Ensure Operator is certified to the crane capacity and monitor wind speeds and loading – L3 ▪ All cranes must use a certified Rigger or Dogman. Crane operator cannot be Dogman / Rigger used to chain / sling load. – L2 ▪ When leaving the crane unattended, always raise the hook and remove the keys / remote to prevent unauthorised use – L2	WH&S Reg 2011, s39, 81 & 207 Construction CoP, S6 AS 2550 Cranes	7 Medium
	Falling objects	16 Severe	▪ No lifting over public without traffic management in place to prevent public entering area/s concerned. ▪ Do not lift materials over workers and/or sheds. Coordinate onsite works and crane operations to prevent. Where impractical appropriate 'Class C' hoarding shall be implemented – L2. ▪ Ensure erection and dismantle methods are documented – L3 ▪ Crane operator / driver has ultimate responsibility to ensure crane is fit-for-purpose – L2	WH&S Reg 2011, s203 and 217 Falls CoP, S3.6 and 3.7	7 Medium
	High Winds	16 Severe	▪ An anemometer (wind gauge) is to be fitted to all cranes in an appropriate location, at the top of the boom, not protected from winds. ▪ Crane manufacturers must state the maximum wind speed that the crane may be operated up to, and the operator must know these limits and not exceed them. ▪ Mobile Cranes: o No lifting is to be attempted with winds over 43km/h (12m/second). o For wind speeds under 43km/h (12m/second), lifting is at the discretion of the crane crew. ▪ Tower Cranes: o For wind speeds under 54km/h (15m/second), lifting is at the discretion of the crane crew. o If wind speeds are over 54km/h (15m/second) and the manufacturers maximum wind speed is higher, a Risk Assessment is to be completed by Construction Control and the crane crew. This RA is to consider manufacturers maximum wind speeds, surface area of items being lifted, size to weight ratio, boom length and surface area of the boom, crane slew brake capacity, doggers ability to control the load, visibility, wind gusts and the effect of wind on the crane. o No lifting is to be attempted with winds over 72km/h (20m/second)	WH&S Reg 2011, s203 Tower Crane CoP 2019 (Draft)	7 Medium
	Lifting equipment failure	16 Severe	▪ Manage Lifting Equipment in accordance with the Lifting Equipment , Section of this Q030104 PRR – L3 ▪ Where fly has been installed / removed - docket must be available to verify installation / removal – L3. ▪ Earthmoving equipment used as a crane must have certified anchor points or be chained / slung by an appropriately licensed rigger. Where the rated capacity of earthmoving equipment exceeds 1 tone Burst Protection must be fitted to both boom and dipper arm of the equipment used as crane – L2	WH&S Reg 2011, S219 Plant CoP, S3 AS 4991 Lifting devices, S15	7 Medium
	Fall from height	16 Severe	▪ Construction Control requires that prior to using a Work Box, used to suspend worker/s from a crane, that task specific controls are developed. ▪ Prior to the arrival of a work box intended to be used as a First Aid Box on site, task specific controls related to the use of a First Aid box shall be developed.	AS 1418.17-1996: Cranes Part 17: Design and construction of workboxes	

4.14 Concrete Pump	Pump and/or line failure / collapse	16 Severe	▪ Ensure a Q070409 Designated Plant Setup Location form has been completed and a copy of the completed document and applicable drawings available for consideration by the site team and crane crew. ▪ Ensure the below listed pump planning and set-up checklist and permits are completed by the CC staff member responsible for the works in consultation with the pump crew prior to pump setup: – L3 Mobile Pump = 1st visit to site S030411d Mobile Concrete Pump Operation Permit 2nd visit to site S30404a Mobile Concrete Pump Setup Checklist Tower/Static Pump = Q030411e Tower / Static Pump Operation Permit ▪ Ensure all line clips are installed – L2 ▪ Manage Lifting Equipment in accordance with the Lifting Equipment section of this Q030104 PRR– L3 ▪ Ensure all daily inspections, monthly thickness tests, yearly inspections, and (6) year major inspections have been completed, and are in the log book (as per AS 2550.15) – L2 / L3	WH&S Reg 2011, s203 Construction CoP, S7.6	7 Medium
	Explosion	14 Severe	▪ Check areas for overhead hazards and interactions with concrete pump and associated works. – L2	Plant CoP, S3.2	7 Medium
	Other trades / public	16 Severe	▪ Ensure 'Pumping in Progress' signage is displayed and 'zone of influence' is isolated – L2 ▪ Work zones to be demarked and barriers are erected according to the site specific needs and tasks undertaken. – L2	WH&S Reg 2011, s203 Plant CoP, S3.2	7 Medium
	Hazardous Substance	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Storage, handling and disposal requirements from the MSDS are incorporated into site-specific Safe Work Method Statement SWMS) and/or Risk assessment – L3 ▪ Task specific SWMS to consider if health surveillance is required L3	WH&S Reg 2011, S49 Haz Chem CoP Construction CoP, S7.1	4 Low
4.15 Ladders and Trestles	Work at Height – Falling object / Falling person / Slip/trip/fall	16 Severe	▪ Working platforms must be industrial grade and used as per manufacturer instructions– L2 ▪ A CC Step and Builder Ladder Permit is required before being worked from (except for access & egress) – L2 ▪ Ensure access ladders are secured and extend at least [1] meter past the landing area– L2 ▪ Extension ladders to be secured at the top as a minimum, installed at a [1] in [4] ratio and visually checked before using– L2 ▪ Generally a working platform must be at ≥ 300mm. Trestles to be [2] planks wide. – L2 ▪ Trestle may only be used up to a 1.5m span. – L2 ▪ Ensure fall prevention is in place next to identified hazards, open windows or edges– L2	WH&S Reg 2011 S78 AS 1892.5 Ladders WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7 Construction CoP, S7.6	8 Medium
	Electric shock	16 Severe	▪ No metal ladders to be used for electrical work– L1	WH&S Reg 2011 S78	
	Ladder / trestle collapse	16 Severe	▪ Ladders & Trestles must be industrial grade with SWL displayed. – L2 / L3 ▪ Ladders & Trestles must be used as per manufacturers guidelines and fully extended – L2	WH&S Reg 2011 S78	7 Medium

4.16 Fall Arrest Equipment - Harness	Work at Height – Falling object / Falling person / Slip/trip/fall	16 Severe	▪ Harnesses used as the primary means of fall prevention only to be used after approval of a CC Q030407 Fall-arrest Equipment Permit (daily) by CC project management– L2 ▪ All anchor points must be certified by a compliant person and adequate for intended use. Certification to be attached to the CC Harness Permit– L2 / L3	WH&S Reg 2011, S79 Falls CoP, s3.6 and 3.7	7 Medium
	Incompetent user, inspector, supervisor, manager	16 Severe	▪ All workers involved in the instalment, inspection, maintenance, operation and supervision must have completed and on file all appropriate training and competencies for as per the Q030409 Inspection Compliance Matrix– L2 / L3 - Operator, Supervisor, Manager, Inspector ▪ Q030407 Fall-arrest equipment permits must also have attached evidence that the attachment fall-arrest equipment attachment point/s have – L2: - design certification by a suitably qualified engineer, - installation certified by a suitably qualified person; and - an appropriate inspection regime applied.	WH&S Reg 2011, S39 Falls CoP, s3.6 and 3.7 Plant CoP, S3.3 AS 1891.4 Fall-arrest equipment, S3	7 Medium
	Equipment failure	16 Severe	▪ A competent person must inspect harness and associated equipment daily prior to operation using the CC Q030428 Harness Checklist or equivalent – L2 ▪ Harnesses must be with (10) years of D.O.M and have all labels legible– L2 ▪ Harness and associated equipment must be registered stating pass of routine inspections by a competent person in accordance with the Q030409 Inspection Compliance Matrix– L2 / L3 ▪ Record of harness inspection and maintenance by a competent person must be available – L3	WH&S Reg 2011, s39 and 213 Plant CoP AS 1891.4 Fall-arrest equipment, S5	7 Medium
	Suspended trauma	16 Severe	▪ A task-specific Work Method Statement and Retrieval Plan must be developed per Harness Permit and approved by CC project management – L3 ▪ First-aid must be notified that harnesses are in use and operators to have suitable communication to supervisory personnel – L3 ▪ Harness Area must be identified on the Project Emergency Plan (PEP) and approved by CC Emergency Controller – L3 ▪ CC shall develop and maintain a Project Emergency Plan (PEP) and communicate emergency procedures to all. Emergency procedures for suspended worker are documented Section 10.10 of this PRR – L3	WH&S Reg 2011, s80 and 217 Falls CoP, S3.6 and 3.7 Construction CoP, S7.6	5 Low
4.17 Hot Works - Welding, - Oxy Acetylene - Grinder	Fire	16 Severe	▪ Ensure a Construction Control Hot Work Permit is completed and approved by CC site Management – L3 ▪ Ensure flashback arrestors are installed at the Oxy Handset and bottles – L2 ▪ Ensure an appropriate fire extinguisher is available – L2 ▪ Ensure area is cleared of debris and flammables when conducting hot works– L2 ▪ Protect items that cannot be removed, but may be effected by hot works – L2 ▪ Monitor area for 5 minutes after hot works to ensure no smouldering fire – L3	Welding CoP S3.4 Work Environment CoP AS 4839 Oxy AS 3833 Dang Subs	5 Low

	Exposure to Hazardous Substances	13 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Storage, handling and disposal requirements from the MSDS are incorporated into contractors site-specific SWMS– L3 ▪ Oxy & Acetylene bottles stored on site will be securely fastened in the upright position and separated by a distance of 5 meters– L2 ▪ Oxy / acetylene bottles to be stored & secured on a trolley fitted with a fire extinguisher; or in designated storage areas as per WMS– L2 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, Division 3.2.7 Welding CoP Haz Chem CoP	8 Medium
	Pedestrians	13 High	▪ Barricading / welding shields shall be installed to protect others – L2	Welding CoP,	3 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR– L3	WH&S Reg 2011, S60 Manual Tasks CoP	8 Medium
4.18 9" Angle Grinder	Noise	12 High	▪ Ensure appropriate ear protection is worn by operator and workers in immediate area – L3	WH&S Reg 2011, S57 Noise CoP	4 Low
	Flying Objects	14 Severe	▪ Ensure eye protection or face shield is worn. – L3	WH&S Reg 2011, S35	7 Medium
	Blade jamming when cutting	12 high	▪ 9" Angle Grinders should not to be used for cutting tied 'reo-bar cage' in a vertical or standing up position, use of "Oxy" or other cutting device	WH&S Reg 2011, S35	4 Low
	Kickback	12 High	▪ All 9" Angle Grinders are to have a 'Brake System' – L2 ▪ 9" Grinder not to be used to cut reinforcement bars above chest height, , use of "Oxy" or other cutting device – L3	WH&S Reg 2011, S35 and 36	4 Low
	Hot Works	14 Severe	▪ Manage Hot Works in accordance with Hot Works sections of this Q030104 PRR – L3	WH&S Reg 2011, S35	7 Medium
	Electrical Shock	16 Severe	▪ Manage Electrical shock in accordance with Electrical Tools section of this Q030104 PRR – L3	WH&S Reg 2011, Division 4.7.3 Electrical CoP	7 Medium
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Manual Handling sections of this Q030104 PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
4.19 Quick Cut saws	Noise	12 High	▪ Ensure appropriate ear protection is worn by operator and workers in immediate area – L3	WH&S Reg 2011, S57 Noise CoP	4 Low
	Flying Objects	14 Severe	▪ Ensure eye protection or face shield is worn. – L3	WH&S Reg 2011, S35	7 Medium
	Blade jamming	12 high	▪ Quick Cut Saws not to be used to cut reinforcement bars above chest height, , use of "Oxy" or other cutting device – L3	WH&S Reg 2011, S35	4 Low
	Kickback	12 High	▪ Quick Cut Saws not to be used for cutting 'reinforcement mesh' in situ, use of "Oxy" or other cutting device – L3	WH&S Reg 2011, S35	4 Low

	Hot Works	14 Severe	▪ Manage Hot Works in accordance with Hot Works sections of this PRR – L3	WH&S Reg 2011, S35	7 Medium
	Hazardous Substance	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Storage, handling and disposal requirements from the MSDS are incorporated into contractors site-specific SWMS. – L3 ▪ Task specific SWMS to consider if health surveillance is required– L3	WH&S Reg 2011, S49 Haz Chem CoP Construction CoP, S7.1	4 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this Q030104 PRR	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
4.20 Explosive Power Tools (EPT)	EPT Failure	12 High	▪ Misfires will lead to the EPT being removed for repair – L3 ▪ Inspection and maintenance as per manufacturer's recommendation – L3 / L2	WH&S Reg 2011, S35 S/L Reg 1950 S9A Plant CoP, s 3.6 and 3.7	8 Medium
	Incompetent Operator	10 Medium	▪ SWMS/JSA/Procedures are to be developed in line with the manufactures instructions. ▪ Operator has been trained in the safe use of the EPT prior to use and acknowledge this training in the relevant procedure above. – L3	WH&S Reg 2011, S39 Plant CoP	8 Medium
	Explosives	15 Severe	▪ EPT only to be loaded at the place the EPT is to be used – L3 ▪ Loaded EPT's shall not be carried or transported from place to place at the workplace, unless because of mechanical failure the EPT cannot be unloaded – L3 ▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6	S/L Reg 1950 S9A WH&S Reg 2011, S35 Construction CoP, S Haz Chem CoP	8 Medium
	Powder Actuated Tools	12 High	▪ 'Warning – Explosive-Powered Tool In Use' signage must be displayed indicating EPT in use – L3 ▪ Used explosive strips are to be immersed in water and placed in an appropriate bin – L2 ▪ Charges to be stored in a metal lockable container or other recommended storage system by the manufacturer – L2	WH&S Reg 2011, S35 S/L Reg 1950 S9A Plant CoP, s 3.6 and 3.7	8 Medium
	Flying Objects	12 High	▪ Ensure there is no person in the line of fire – L2 ▪ Ensure safety glasses are worn by operator – L3	WH&S Reg 2011, S35	8 Medium
	Noise	13 High	▪ Ensure appropriate ear protection is worn by operator and workers in immediate area – L3	WH&S Reg 2011, S57 Noise CoP	8 Medium
	Plant failure	14 High	▪ Ensure routine maintenance is complete as per manufactures guidelines – L2 ▪ Compete preoperational inspection of pant as per manufactures guidelines – L3 ▪ Manage Plant in accordance with Plant and Equipment section of this PRR – L3	WH&S Reg 2011, S35 Plant CoP, s 3.6 and 3.7	8 Medium

4.21 Portable Generators	Electrical	15 Severe	▪ Manage Electrical in accordance with Electrical section of this Q030104 PRR – L3 ▪ When a generator supplies a fixed installation it must be: - installed and certified by a licensed electrician and a certificate of electrical safety provided - inspected by a licensed electrical inspector before it is used for the first time, and after any alteration to the location or installation of the generator. – L2 ▪ Where generators are supplying fixed switchboards, the RCD may be mounted on the switchboard. – L2 ▪ Ensure generator is earthed / grounded to suitable means. Use ground-fault circuit interrupters (GFCIs) as per the manufacturer's instructions. – L2 ▪ Manufacturers or suppliers of generators must provide information regarding relevant earth and bonding connections if the generator is used to supply portable tools and equipment. This information should be on label displayed prominently on the generator and indicate whether the unit is a bonded generator or an isolated winding generator. – L2 ▪ Electrical socket-outlets on generators must be protected by RCD not exceeding 30 mA and should be connected in accordance with AS/NZS 3012. – L2 ▪ Portable socket-outlet assemblies (PSOA) must not be used in connection with isolated winding generators, as the RCD will not function. Only one item of class 1 electrical equipment must be used with an isolated winding generator. – L2	Electrical CoP Industry Standard – Electrical, S5 AS 3012 Electrical	6 Low
	Manual Handling	14 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this Q030104 PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	8 Medium
	Noise / Vibration	14 High	▪ Position generator as far away as practical from work areas and gathering places – L2 ▪ Ensure appropriate ear protection is worn by operator and workers in immediate area – L2	WH&S Reg 2011, S57 Noise CoP	8 Medium
	Exposure to Hazardous Substance – Carbon-monoxide	15 Severe	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Use in well ventilated areas. Consider alternative electric and diesel generators. Battery-operated CO alarms should be used in immediate enclosed work areas. – L2 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, S49 Haz Chem CoP Construction CoP, S7.1 Plant CoP, S4.6	8 Medium
	Fire	15 Severe	▪ Ensure suitable fire extinguisher is immediately accessible ▪ Allow motor to cool before refuelling	WH&S Reg 2011, S35	8 Medium
			▪		

Activity / Item	Hazards / Aspects & Risks / Impacts	Initial Risk Score	Control Measures / Risk Treatment	Legislation, Codes of Practice, and Guidelines (including other available information on hazard / risk)	Residual Risk Score
5. **ELECTRICAL**					
5.1 Electrical Construction Wiring	Damage to electrical cable causing shock or fire	15 Severe	▪ Must have conduit installed on construction wiring up to 2.4m in height, or where it may be subject to damage – L2 ▪ Mark with 'Construction Wiring' yellow tape at 5m intervals – L3 ▪ Flexible leads must not be run across metal components and must be protected against damage– L2	WH&S Reg 2011, Part 4.7 Electrical CoP Industry Standard – Electrical AS 3012 Electrical	8 Medium
	Electric shock	15 Severe	▪ No Live Work to be conducted, unless the risk of de-energising presents as a greater risk – L1 ▪ Electrician must have a lock out tag out procedure in accordance with AS 3000 (de-energise, lock the CB, tag the CB with name & details, only installer of tag to remove, test & certify new installation) – L2 ▪ Flexible leads to be elevated on insulated lead stands, hooks or similar – L2	WH&S Reg 2011, Part 4.7 Electrical CoP AS 3012 Electrical AS 3000 Electrical	5 Low
5.2 Electrical Tools and Extension Leads	Damage to electrical tool / lead causing shock or fire	16 Severe	▪ Tested and tagged as per Electrical Code of Practice (frequencies specified in PMP) – L3 ▪ Checked prior to use. If faulty, removed from service until repaired – L2 ▪ Recorded on a register which is provided to CC – L3 ▪ Flexible leads must not be run across metal components and must be protected against damage – L2 ▪ No extension leads set up to be greater than 30m – L1 ▪ No Double Adaptors allowed on site – L1 ▪ All 3 pin plugs and extension lead sockets shall be non-rewireable or transparent. – L2 ▪ Extension lead use shall be limited to the floor on which the power is sourced, except for falsework or service shafts – L2	WH&S Reg 2011, Part 4.7 Electrical CoP Industry Standard – Electrical, S5 AS 3760 Electrical	8 Medium
	Trip / Slip / Fall	13 High	▪ Extension leads must be raised to a practical level using insulated means. – L2	WH&S Reg 2011, S40 Construction CoP, S7.1	4 Low
5.3 Temporary Electrical Switchboards	Electric shock	15 Severe	▪ The project electrician is to apply for a S080431 Temporary Switchboard Installation permit, via Simpel, and obtain CC approval, prior to installing a temporary switchboard on the project. ▪ The project electrician is to apply for a S080432 Temporary Switchboard Operation permit, via Simpel, and obtain CC approval, prior to switching on a new temporary switchboard for use on the project. The S080432 Temporary Switchboard Operation permit will track that the quarterly RCD testing and inspections are occurring as required. ▪ Tested and tagged as per Electrical Code of Practice (frequencies specified in PMP) – L3 ▪ Provided with RCD protection for power outlets – L2 ▪ Provided with an insulated tie bar for securing leads to– L2 ▪ Switchboards shall have a non-conductive support to assist in keeping cables off the floor or ground – L2	WH&S Reg 2011 Division 7.7 AS 3760 Electrical Electrical CoP AS 3012 Electrical	8 Medium

	Inadequate signage	12 High	▪ The signage on switchboards must include: – L3 - 'Danger – Live Parts' where the live parts are - a unique S/B number - the S/B number of the board it is fed from - identification of the main switch ▪ 'Keep Closed–Run All Leads Through Bottom' sign on the Door	Electrical CoP Industry Standard – Electrical AS 3012 Electrical	4 Low
	Fire	15 Severe	▪ Ensure an appropriate fire extinguisher is available at or adjacent to all switchboards – L2	Industry Standard – Electrical	4 Low
	Access / Egress	12 High	▪ Ensure clear access of 1.5 m^2 is provided at all times – L2	WH&S Reg 2011, S40 Industry Standard – Electrical, S5	3 Low
	Inadequate construction	12 High	▪ Robust construction rated to IP23 – L2 ▪ Provided with a door that requires the use of a tool for removal, has a facility for locking, and has a means to retain in the open position – L2 ▪ Switchboards shall be fitted with a separate main isolating switch for " de-energizing" all outgoing circuits and in addition to that a 'lockable cover' is fitted over circuit breakers and RCDs located on that switchboard, which does not prevent access to the main isolating switch – L2 ▪ Socket outlets shall be rated at not less than 10Amp, including at least one 15 A or 16 A single phase socket – L2 ▪ Switchboards shall be securely mounted, unless of a stable freestanding design – L2 ▪ Switchboards shall be secured to working deck. Where this is not practicable, a *S030106 Risk Assessment* is to be completed that considers the situation, including the freestanding design capacity of the relevant switchboard.	Plant CoP, S3.2 Industry Standard – Electrical, S5 AS 3760 Electrical AS 3012 Electrical	8 Medium
	Slips and Trips	10 Medium	▪ Maintain housekeeping around and clear access to switchboard – L2	WH&S Reg 2011, S40 Construction CoP, S7.1	3 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this Q030104 PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	7 Medium
5.4 Work on or near energised electrical installations or services HIGH RISK WORK s291(k) Work Health Safety Regulations	Failure to identify if electrical equipment is energised	16 Severe	▪ Before electrical work is carried out on electrical equipment, the equipment must be tested by a competent electrician to determine whether or not it is energized. Exposed parts should be treated as live until isolated and determined not to be energized – L1 ▪ High Voltage exposed parts must be earthed after being de-energised – L1	WH&S Reg 2011, S291 (K)	7 Medium
	Inadvertent re-energisation of de-energised equipment	16 Severe	▪ Electrical equipment that has been de-energized to allow electrical work to be carried out is not to be inadvertently re-energised while the work is being carried out. Workers MUST confirm the isolation prior to cut and re-check prior to carrying out work in the vicinity of the isolated electrical services – L1 ▪ Where a contractors isolation permit doesn't cover assessed aspects in CC's Q030422 Isolation of Electrical Services Permit this will be used by contractors – L3 ▪ Where a contractors energisation permit doesn't cover assessed aspects in CC's Q030423 Electrical Energisation Permit this will be used by contractors – L3	WH&S Reg 2011, S291 (K)	7 Medium

	Electric work on energised electrical equipment	16 Severe	▪ No work is to be carried out on electrical equipment unless: - It is necessary that the electrical equipment to be worked on is energised in order for the work to be carried out properly or for testing purposes; or - It is necessary for the purposes of testing required under clause 155 of the WH&S regulation; or - There is no reasonable alternative means of carrying out the work. ▪ A risk assessment and SWMS is to be complete in consultation with workers involved in the activity – L3	WH&S Reg 2011, S291 (K)	7 Medium
	Unauthorised access to equipment while it is being worked on	16 Severe	▪ Only authorised persons permitted in the immediate area where electrical work on energized electrical equipment is being carried out – L1 ▪ All workers must be trained and competent to carry out assigned tasks. Licenced electrician on site at all times to supervise works – L3	WH&S Reg 2011, S291 (K)	
	Use of inadequate or faulty equipment or procedures	16 Severe	▪ Use of fit-for -purpose tools and equipment that have been properly tested and are maintained in good working order. Inspect prior to each use and remove any faulty equipment from the site – L1 ▪ All workers shall be trained in the correct and safe use of equipment and PPE – L3 ▪ The electrician site supervisor shall be allocated responsibility to ensure the SWMS is implemented, monitored and reviewed as required – L3 ▪ The electrician site supervisor shall be a qualified electrician trained in first-aid and emergency response procedures – L3	WH&S Reg 2011, S291 (K)	7 Medium
	Failure to assess the risks associated with the electrical work	16 Severe	▪ All workers shall be inducted into site-specific SWMS. An additional risk assessment sis to be completed in consultation with workers if the SMWS does not identify the risk due to site-specific or changed conditions – L1 ▪ Work area shall be cleared of obstructions to allow for easy access and exit – L2 ▪ The point at which the electrical equipment is to be disconnected or isolated from the electricity supply must be clearly marked or labelled, clear of obstructions and capable of being operated quickly – L2 ▪ Workers must be trained and competent to carry out their tasks. Competent supervisor on site at all times – L3	WH&S Reg 2011, S291 (K)	7 Medium
	Contact with energised electrical services when working on it with equipment	16 Severe	▪ **No work on live power where practicable – L1** ▪ **Isolation/Energisation Permit System utilized to verify testing of completion of task to the standard required. No person is authorised to energise power without the completed Permit – L1** ▪ Safe work practices shall be practiced to ensure while electrical work is being carried out on energised electrical equipment, all persons are prevented from creating electrical risks by inadvertently making contact with an exposed energized component of the equipment – L1 ▪ All workers must be trained and competent to carry out assigned tasks. Licenced electrician on site at all times to supervise works – L3 ▪ Dial before you Dig – Refer to current approved excavation drawings – L3	WH&S Reg 2011, S291 (K)	7 Medium

	Electric Shock / electrocution	16 Severe	▪ No electrical equipment should be assumed to be de-energized after isolation. Always test prior to touching using multi-meter – L1 ▪ **Identify** – Clearly identify the electrical equipment to be worked on and the appropriate point of supply. Identification of equipment should include labelling that is both consistent and clear at the equipment to be worked on and all points of possible isolation – L2 ▪ **Isolate** – The electrical equipment to be worked on must be isolated from all sources of supply either by opening switches, removing fuses or switching circuit breakers. Where isolation is effected at a removable or rack-out circuit breaker or combined fuse switch then it should be racked out or removed to provide a visible break for isolation verification – L2 ▪ **Test** – All electrical equipment, unless proven to be de-energised, must be treated as live. Any voltage tests must be conducted between all conductors and between all conductors and earth. Testing must be carried out to confirm isolation by use of a multi-meter – L2 ▪ **Multi Metre must be tested for correct operation immediately before use, and again after use to confirm that the instrument is still working** – L2 ▪ **Switching, isolation or disconnection** - Notices must be clearly understandable and where appropriate, signed and dated by all personnel involved in the work. Tags should be only removed with the permission of all the signatories to the tags or if not possible by the signatory's immediate supervisor – L2 ▪ **Lock-off** – All circuit breakers, switches and combined fuse switch units should be locked off where possible. Where fitted locking facilities are not available, temporary securing devices must be used. Securing devices must be able to withstand any disrupting environment – L2 ▪ **Isolation locks / tags** – Locks to be used include: padlocks, lockout stations, lockout kits, circuit breaker lockouts, valve lockouts, plug lockouts, group lock boxes, and safety lockout jaws (sometimes called hasps). Tags to be used where required out of service tags and personal danger tags shall be complete. Isolation/lockout tags shall have plant description, name and contact details of person placing lock/tag isolation, authorise person to remove lock/tag, date, time and signature.	WH&S Reg 2011, S291 (K)	7 Medium

Activity / Item	Hazards / Aspects & Risks / Impacts	Initial Risk Score	Control Measures / Risk Treatment	Legislation, Codes of Practice, and Guidelines (including other available information on hazard / risk)	Residual Risk Score
6. **STRUCTURE**					
6.1 Stressing Systems	Cut on sharp edges	12 High	▪ Obtain suitable location for Bripak and coils of strand from CC Foreman before craning it onto the deck – L2	WH&S Reg 2011, S40 Construction CoP	4 Low
	Release of tendon under stress	15 Severe	▪ Use a portable barricade within 2m of the jack which incorporates two sheets of form ply or equivalent and at least 75mm apart when conducting final stress – L2 ▪ "Stressing In-Progress" warning signage to be displayed in immediate area and at entrance way to the area or floor – L3	WH&S Reg 2011, S35 Plant CoP, S3.2	8 Medium
	Work at Height – Falling object / Falling person /	16 Severe	▪ Manage Work at Height in accordance with Work at Height and Temporary Edge Protection sections of this Q030104 PRR – L2	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium
	Plant	16 Severe	▪ Manage Plant & Equipment in accordance with Use of Plant & Equipment - General section of this PRR – L3	WH&S Reg 2011, S35 Plant CoP	7 Medium
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
	Concreting	12 High	▪ Manage Concreting in accordance with the Concreting section of this Q030104 PRR – L3	WH&S Reg 2011, S35 Plant CoP	4 Low
	Mechanical / Structural Failure	16 Severe	▪ Bripak frame shall have design drawings and/or the WLL marked on them – L2 ▪ Documented on plant / equipment register, including maintenance inspection – L3 ▪ Daily inspection of the Structural equipment / frames prior to use – L3 ▪ Barricade the Bripak area when running cables – L2 ▪ Use cable feeder where possible – L2 ▪ Ensure a braking method is in place to prevent cable overrun – L2 ▪ Ensure all ducts and cables are covered – L2 ▪ Obtain approval prior to initial and final stressing from CC Foreman – L2 ▪ Ensure eye and ear protection are worn when cutting cables – L3	WH&S Reg 2011, S35 Plant CoP	7 Medium
6.2 Steelfixing	Cut on sharp edges	12 High	▪ Install safety caps on all protruding bars – L2 ▪ Documented on plant / equipment register, including maintenance inspection – L3 ▪ Daily inspection of the Structural equipment / frames prior to use – L3 ▪ Identification of the weights of the structures being assembled on the Structural equipment / frames ▪ Ensure gloves are worn around sharp edges – L2	WH&S Reg 2011, S40	4 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L2	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low

	Slips and trips	12 High	▪ Ensure good housekeeping practices – L2 ▪ Safety footwear to be in good condition – L3	WH&S Reg 2011, S40 Construction CoP	4 Low
	Structural equipment / frames collapsing	14 Severe	▪ De-burr bars before delivery, where possible – L2 ▪ Structural equipment / frames shall have design drawings / documents and/or the WLL marked on them – L2	WH&S Reg 2011, S35 AS 4991 Lifting Devices	7 Medium
	Cutting steel - Grinding	12 High	▪ Manage grinding activities in accordance with the 9" Angle Grinder and Quick Cut saws sections of this PRR – L3	WH&S Reg 2011, S35	4 Low
	Hot works	14 Severe	▪ Manage hot works in accordance with the Hot Works section of the PRR – L3	WH&S Reg 2011, S35	7 Medium
	Work at Height – Falling object / Falling person /	16 Severe	▪ Manage falling objects / persons in accordance with Working at Heights section of this PRR – L3 ▪ All steelfixing stands must have engineered design drawings; WLL / SWL displayed and have an appropriate inspection and maintenance regime by a competent person as per Section 3.4 Lifting Devices of this PRR – L2	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium
	Penetrations	16 Severe	▪ Manage penetrations in accordance with the Penetration section of this PRR – L3	WH&S Reg 2011, S35	7 Medium
6.3 Pre-Cast Panels	Panel collapsing / falling	16 Severe	▪ Ensure all panels have individual certification – L2 ▪ Minimise personnel in the fall zone of the panel – L2 ▪ Ensure panel is erected in accordance with AS 3850 – L2 ▪ All panels shall have appropriate certificates and markings as per AS 3850, 2.6.2 – L2 ▪ All panels shall have a temporary bracing design approved as per AS 3850, 6.1 – L2 ▪ All panels shall be installed as per drawings and visually inspected as per AS 3850, 6.2 – L2 ▪ Ensure the Pre-Cast Panel Checklist is completed prior to and during erection – L3 ▪ Ensure the Pre-Cast Brace Removal Checklist is completed prior to removal of bracing – L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7 AS 3850 Precast	7 Medium
	Work at Height – Falling object / Falling person /	16 Severe	▪ Follow Section 13.6 of the Q070302 Project Management Plan – L3 ▪ Manage falling objects / persons in accordance with Working at Heights section of this PRR – L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
	Frame collapsing / falling	14 Severe	▪ Structural equipment / frames shall have design drawings and/or the WLL marked on them – L2 ▪ Documented on plant / equipment register, including maintenance inspection – L3 ▪ Daily inspection of the Structural equipment / frames prior to use – L3	WH&S Reg 2011, S35 Plant CoP AS 3850 Precast	7 Medium
	Crane Operation	16 Severe	▪ Manage Cranes in accordance with Cranes Section of this PRR – L3	WH&S Reg 2011, S35 Plant CoP	7 Medium

6.4 Structural Steel	Work at Height – Falling object / Falling person	16 Severe	▪ Manage falls from heights and falling objects in accordance with Working at Heights section of this PRR – L3 ▪ Isolate the area below installation – L2 ▪ Manage unloading in accordance with the Materials Handling section of this PRR	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR– L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
	Cut	12 High	▪ Manage Cranes in accordance with Cranes section of this PRR – L3 ▪ Ensure gloves are worn – L3		4Low
6.5 Concrete Placement	Formwork collapse	16 Severe	▪ Ensure the formwork has been certified prior to pour – L2 ▪ Concrete pumps to be cleaned after each pour in a designated and approved area – L2 ▪ Manage Formwork in accordance with Formwork section of this PRR – L3 ▪ Ensure a Concrete Placement Checklist is completed – L3	WH&S Reg 2011, S35 Formwork CoP AS 3610.1 Formwork	7 Medium
	Work at Height – Falling object / Falling person	16 Severe	▪ Manage falling objects / persons in accordance with Working at Heights section of this PRR – L3 ▪ No items shall be installed into 'Puds" for lifting or carrying – L2 ▪ Work zones to be demarked and barriers are erected according to the site specific needs and tasks undertaken– L2	WH&S Reg 2011, S217 Falls CoP Construction CoP, S7.6	7 Medium
	Personnel hit by plant	14 Severe	▪ Work zones to be demarked and barriers are erected according to the site specific needs and tasks – L2 ▪ Manage Plant in accordance with Plant and Equipment Section 3.3 of this PRR– L3 ▪ Ensure 'Pumping in Progress' signage is displayed – L3	WH&S Reg 2011, S35 Plant CoP	7 Medium
	Mechanical Failure	16 Severe	▪ Manage Concrete Pumps in accordance with Concrete Pumps section of this PRR – L3	WH&S Reg 2011, S35 Plant CoP	7 Medium
	Inadequate inspection	12 High	▪ Ensure all daily inspections, monthly thickness tests, yearly inspections, and (6) year major inspections have been completed, and are in the log book (as per AS 2550.15) – L2	WH&S Reg 2011, S35 Plant CoP	4 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
	Hazardous Substances	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, S49 Construction CoP, S7.1	4 Low
6.6 Installation of Columns	Work at Height – Falling object / Falling person	16 Severe	▪ Install column reo prior to erection of Formwork – L1 ▪ Column openings must have suitable cover until steel work placed in hole – L2 ▪ Barricading to be used and worked from outside when covers removed for large columns, until steel installed – L2 ▪ Work zones to be demarked and barriers are erected according to the site specific needs and tasks undertaken – L2 ▪ Manage falling objects / persons in accordance with Working at Heights section of this PRR – L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7 AS 3610.1 Formwork	7 Medium

	Cuts	12 High	▪ All bars under 2.5m in height from formwork deck must be capped – L2	WH&S Reg 2011, S49	7 medium
6.7 Coring or drilling slab and walls	Unplanned Electrical Contact	16 Severe	▪ Complete *S030427 Concrete Coring / Cutting Permit* in Simpel. ▪ Ensure services are isolated, with isolation points identified – L2 ▪ Ensure services remaining live are appropriately identified and protection or exclusion zones documented – L2	WH&S Reg 2011, S35 Industry Standard – Electrical	7 Medium
	Contact with stressing tendons	14 Severe	▪ Complete *S030427 Concrete Coring / Cutting Permit* in Simpel. ▪ Refer to "as built' drawings prior to set out. to ensure location of services and/or stressing tendons – L2	WH&S Reg 2011, S35	7 Medium
	Cores - Materials falling	14 Severe	▪ Complete *S030427 Concrete Coring / Cutting Permit* in Simpel. ▪ Barricade exclusion zone directly beneath coring area. – L2 ▪ "Spotter" to remain on the floor below, until coring is complete. – L2	WH&S Reg 2011, S217 Falls CoP	7 Medium
	Electrical shock	16 Severe	▪ Manage electrical shock in accordance with Electrical Tools and Extension Leads section of this PRR	Electrical CoP	7 Medium
	Hazardous Substances	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, S49 Construction CoP	4 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
	Noise	12 High	▪ Immediate area to be isolated and signposted to warn others of noise hazard– L2 ▪ Ensure appropriate ear-plugs / ear-muffs are worn when coring – L3 ▪ Task specific WMS for trades indicate health surveillance is not required for this task– L3	WH&S Reg 2011, S57 Noise CoP	4 Low
	Flying object	14 Severe	▪ Ensure safety glasses / goggles / face shield is worn when coring – L3	WH&S Reg 2011, S49	7 Medium
	Dust	12 High	▪ Manage dust as per PRR item 9.8 Respirable Crystalline Silica (RCS) Management	WH&S Reg 2011, S49 Haz Chem CoP	4 Low

Activity / Item	Hazards / Aspects & Risks / Impacts	Initial Risk Score	Control Measures / Risk Treatment	Legislation, Codes of Practice, and Guidelines (including other available information on hazard / risk)	Residual Risk Score
7. **FAÇADE AND ROOF WORKS**					
7.1 Masonry	Cuts	12 High	▪ Isolate cutting area from personnel – L2 ▪ Ensure cut-off table saws are stable, robust and wet method is used where possible – L2	WH&S Reg 2011, S35	4 Low
	Flying Objects / Dust	12 High	▪ Manage dust by using wet cutting methods, or a P2 dust mask to be worn with immediate area isolated and signposted to avoid exposure to others – L2 / L3 ▪ Task specific WMS for trades indicate health surveillance is not required for this task – L3	WH&S Reg 2011, S35	4 Low
	Noise	12 High	▪ Immediate area to be isolated and signposted to warn others of noise hazard – L2 ▪ Ensure appropriate ear-plugs / ear-muffs are worn when cutting / drilling – L3 ▪ Task specific WMS for trades indicate health surveillance is not required for this task – L3	WH&S Reg 2011, S57 Noise CoP	4 Low
	Work at height	16 Severe	▪ Manage Scaffold use in accordance with 3.07 Mobile Scaffold and 3.06 Scaffold sections of this PRR– L3 ▪ Manage Work at Height in accordance with Edge Protection and Working at Heights Sections of this Q030104 PRR – L3 ▪ Do not overload or alter scaffold erected by other trades – L2	WH&S Reg 2011, S79 and 225 AS 1576 Scaffold AS 4576 Scaffold	7 Medium
	Slips and Trips	12 High	▪ Maintain good housekeeping– L2 ▪ Manage access in accordance with Access / Egress Section of this PRR – L3	WH&S Reg 2011, S40	4 Low
	Falls from Height	16 Severe	▪ Manage Work at Height in accordance with Edge Protection and Working at Heights Sections of this Q030104 PRR – L3	WH&S Reg 2011, S35 Falls CoP	7 Medium
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
	Hazardous Substances	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required L3	WH&S Reg 2011, S49 Haz Chem CoP	4 Low
7.2 Windows	Crane	16 Severe	▪ Isolate cranage area – L2 ▪ Manage Cranes in accordance with Cranes section of this PRR– L3	WH&S Act 2011 S21 Plant CoP	7 Medium
	Work at Height – Falling object / Falling person	16 Severe	▪ Manage Working at Heights in accordance with Working at Heights section of this PRR– L3 ▪ Ensure stored glass is secured – L2	WH&S Reg 2011, S217 Falls CoP Construction CoP	7 Medium
	Cuts to Hands	12 High	▪ Wear cut resistant gloves when handling glass product – L3	WH&S Reg 2011, S40	4 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low

	Structural equipment / frames collapsing	14 Severe	▪ Ensure lifting device is certified and checked prior to each lift – L2 ▪ Structural equipment / frames shall have design drawings and/or the WLL marked on them – L2 ▪ Manage Lifting Equipment in accordance with the Lifting Equipment , Section 3.04 of this Q030104 PRR ▪ Daily inspection of the Structural equipment / frames prior to use – L3 ▪ Documented on plant / equipment register, including maintenance inspection – L3	WH&S Reg 2011, S39 Construction CoP, S6 AS 4991 Lifting Devices	7 Medium
7.3 Roofing	Work at Height – Falling object / Falling person	16 Severe	▪ Safety mesh shall be installed in accordance with AS 4389 and ACT Code of Practice for Working On Roofs Part 1 – L2 ▪ Ensure safe access to roof – L2 ▪ Work from installed sheets, not from mesh side – L2 ▪ Remove all off cuts to a bucket or similar – not a bag – L2 ▪ Manage Working at Heights in accordance with Working at Heights section of this PRR – L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7 Construction CoP, S7.6 AS 4389 Mesh	7 Medium
	Cuts to Hands	12 high	▪ Wear cut resistant gloves when handling sheets & sharps – L3	WH&S Reg 2011, S40	4 Low
	Manual Handling	12 high	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR	WH&S Reg 2011, S60	4 Low
7.4 Concrete structure edge protection prior to and during façade installation	Work at Height – Falling person	16 Severe	▪ An engineered, proprietary edge protection system, suitable for use during curtain wall installation or facade, is to be installed prior to screens being lifted or scaffold stripped. The edge protection system must be installed by a competent person, as specified by the manufacturer's instructions - L2 ▪ The project team is to consider if the handrail is to be installed prior to the placement of formwork frames or post stripping of each level, the process must ensure that the edge protection can be safely fitted before screens are lifted or scaffold stripped – L1 ▪ A handover in compliance with the manufacturer's instructions must be provided by the installer prior to use – L3 ▪ If a non-proprietary edge protection system (e.g., scaffold based) is being considered, which is not designed specifically for curtain wall installation, a *S030106 Risk Assessment* must be completed and endorsed by the Project Manager and the Project Director prior to procurement L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium

	Work at Height - Falling Object	16 Severe	▪ A 2m exclusion zone from the slab edge back inside the building is to be clearly marked on the slab with red paint before screens are lifted or scaffold stripped – L1 ▪ No works are to occur within this 2m zone unless a S030106 Risk Assessment has been completed, with control measures developed. Control measures may include; experienced workers only to enter area, exclusion zones below, lanyard use for tools and equipment, spotters and bump stops for scissors, an engineered propriety netting system or physical barricade designed for use as a construction barricade system installed from the underside of slab to the top of slab prior to screens being lifted/removed or scaffold stripped – L3 ▪ Plant or materials are not to be stored within the 2m exclusion zone - L1 ▪ The Design Risk Assessment shall consider setting service runs at least 2m back from the building edge. Service contractors to fit items with the 2m exclusion zone after the façade glass has been installed. If this is not possible a S030106 Risk Assessment must be completed and control measures developed – L1 ▪ Where possible externally fitted items such as façade brackets are to be installed prior to screens being lifted or scaffold stripped and then adjusted for alignment as required at a later time. If this is not possible, lanyards are to be attached to the brackets and exclusions zones below put in place - L1	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium
	Work at Height – Falling EWP/Plant	16 Severe	Bump stops are to be installed when screens, scaffold or façade panels are not in place to protect the building edge. The bump stops are to be a proprietary system or timber. Timber bump stops shall be: • Minimum 1 metre back from the building edge. • Minimum of 45mm tall and 70mm wide. • Secured at each end and every 2000mm with an 8mm concrete anchor fixed to a depth of 45mm – L2 Bump stops shall be inspected weekly using the S030402 Project Inspection Record – L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR	WH&S Reg 2011, S60	4 Low
	Hazardous Substances	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, S49 Haz Chem CoP Construction CoP	4 Low

Activity / Item	Hazards / Aspects & Risks / Impacts	Initial Risk Score	Control Measures / Risk Treatment	Legislation, Codes of Practice, and Guidelines (including other available information on hazard / risk)	Residual Risk Score
8. FIT OUT AND FINISHING WORK					
8.1 Electrical Services Installation	Electrical shock	16 Severe	▪ No Live Work to be conducted, unless the risk of de-energising presents a greater risk – L1 ▪ Installation of electrical services shall be by a licensed electrician and in accordance with AS/NZS 3000 & AS/NZS 3012. – L2 ▪ Overhead wiring shall be positioned so that they are protected from mechanical, liquid or high temperature damage – L2 ▪ RCD to be installed on all power outlets, site sheds and amenities – L2	WH&S Reg 2011 Part 4.7 Manual Tasks CoP AS 3000 Electrical AS 3012 Electrical Electrical CoP	7 Medium
	Manual Handling	12 high	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
	Work at Height – Falling object / Falling person	16 Severe	▪ Electrician must have a lock out tag out procedure in accordance with AS 3000 (de-energise, lock the CB, tag the CB with name & details, only installer of tag to remove, test & certify new installation) – L2 ▪ Manage falls from heights and falling objects in accordance with Working at Heights section of this PRR	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium
8.2 Hydraulics	Plant and Equipment	14 Severe	▪ Manage Plant & Equipment in accordance with Use of Plant & Equipment - General section of this PRR – L3	WH&S Reg 2011, S35 Plant CoP, s 3.6 and 3.7	7 Medium
	Work at Height – Falling object / Falling person	16 Severe	▪ Manage Working at Heights in accordance with Working at Heights section of this PRR – L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium
	Hazardous Substances	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, S49 Haz Chem CoP Construction CoP, S7.1	4 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
8.3 Mechanical Services Installation	Fire	15 Severe	▪ Manage Hot Works in accordance with Hot Works section of this PRR – L3	WH&S Act 2011 S21	8 Medium
	Hazardous Substances	12 high	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, S49 Construction CoP, S7.1	4 Low

	Work at Height – Falling object / Falling person	16 Severe	▪ Isolate areas below when installing duct work – L2 ▪ Manage Working at Heights in accordance with Working at Heights section of this PRR – L3 ▪ Cover all penetrations, only cut out mesh required to fit services – L3	WH&S Reg 2011, S217 Falls CoP, S3. and 3.7	7 Medium
	Manual Handling	12 high	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
	Cuts to Hands	12 High	▪ Ensure gloves are worn when installing duct work – L3	WH&S Reg 2011, S40	4 Low
8.4 Carpentry	Hazardous Substances	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6	WH&S Reg 2011, S49	4 Low
	Work at Height – Falling object / Falling person	16 Severe	▪ Manage Working at Heights in accordance with Working at Heights section of this PRR – L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
	Slips and Trips	12 High	▪ Ensure slip and trip hazards are removed before commencing works– L2 ▪ Clean work areas daily – L2	WH&S Reg 2011, S40	4 Low
	Flying Objects	14 Severe	▪ Ensure eye are worn when cutting – L3	WH&S Reg 2011, S35	7 Medium
	Noise	12 High	▪ Ensure appropriate ear protection is worn during plant operation – L3. ▪ Manage Noise in accordance with Noise, Section 8.2 Handling of this PRR – L3	WH&S Reg 2011, S57 Noise CoP	4 Low
	Cuts to hands	12 High	▪ Ensure gloves are worn around sharp edges – L3	WH&S Reg 2011, S40	4 Low
	Explosive Power Tools	14 Severe	▪ Manage Explosive Power Tools in accordance with Explosive Power Tools section of this PRR – L3	WH&S Reg 2011, S79 Falls CoP	7 medium
	Laser	12 High	▪ Manage Lasers in accordance with Lasers section of this PRR – L3	WH&S Reg 2011, S223 AS 2297 Lasers	4 Low
8.5 Lasers	Eye Injury	12 High	▪ Lasers or laser products shall not operate unless it has been classified and labelled in accordance with AS 2211– L2 ▪ Class 3 B or Class 4 lasers or laser products shall not be used; – L2 ▪ 'Laser in Use' signage must be displayed– L2 ▪ Use of laser or laser products in building or construction operations shall be in accordance with AS 2397 – L2	WH&S Reg 2011, S223 Plant CoP AS 2297 Lasers	4 Low
8.6 Fire Services Installation	Fire	16 Severe	▪ Cover all penetrations, only cut out mesh required to fit services – L2 ▪ Manage thread cutters in accordance with Use of Plant & Equipment – General section of this PRR – L3 ▪ Manage Hot Works in accordance with Hot Works section of this PRR – L3	WH&S Reg 2011, S35 Plant CoP	7 Medium

	Work at Height – Falling object / Falling person	16 Severe	▪ Manage Working at Heights in accordance with Working at Heights section of this PRR– L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium
	Hazardous Substances	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, S49 Haz Chem CoP Construction CoP, S7.1	4 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
8.7 Joinery	Dust	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ MDF to be cut off site where possible, otherwise a contained area is to be commissioned – L1 ▪ Establish cutting areas and cutting benches – L2 ▪ Vacuum extraction from saw – L2 ▪ Ensure dust mask and eye and ear protection is worn when cutting – L3	WH&S Reg 2011, S49 Haz Chem CoP Construction CoP, S7.1	4 Low
	Flying Objects	12 High	▪ Ensure appropriate safety glasses / goggles / face shield is worn when cutting / drilling / sanding – L3	WH&S Reg 2011, S35	4 Low
	Noise	12 High	▪ Ensure appropriate ear protection is worn during power-tool operation – L3. ▪ Manage Noise in accordance with Noise, Section 8.2 Handling of this PRR – L3 ▪ Task specific WMS for trades indicate health surveillance is not required for this task – L3	WH&S Reg 2011, S57 Noise CoP	4 Low
	Hazardous Substances	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, S49 Haz Chem CoP Construction CoP	4 Low
	Work at Height – Falling object / Falling person	16 Severe	▪ Manage falls from heights and falling objects in accordance with Working at Heights section of this PRR – L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
8.8 Waterproofing	Hazardous Substance	12 High	▪ Ensure task lighting is adequate and will not ignite the product – L2 ▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6	WH&S Reg 2011, S49 Haz Chem CoP	4 Low
	Work at Height – Falling object / Falling person	16 Severe	▪ Manage falls from heights and falling objects in accordance with Working at Heights section of this PRR – L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium

	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
8.9 Painting	Hazardous Substances	12 High	▪ Water based paints to be used where possible – L1 ▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, S49 Construction CoP, S7.1	4 Low
	Work at Height – Falling object / Falling person	16 Severe	▪ Ensure fall prevention is in place next to identified hazards, open windows or edges – L2 ▪ Manage falls from heights and falling objects in accordance with Working at Heights section of this PRR – L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7	7 Medium
	Manual Handling	12 high	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR	WH&S Reg 2011, S60	4 Low
8.10 Tiling (Walls & Floors)	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
	Respirable Crystalline Silica (RCS)	12 High	▪ Manage dust as per PRR item 9.8 Respirable Crystalline Silica (RCS) Management ▪ PPE requirements shall be based on task specific risk assessment – L3 ▪ Task Specific risk assessment shall identify any need for health surveillance and shall be defined by the contractor if required - L3	WH&S Reg 2011, Division 3.2.7 Haz Chem CoP	4 Low
	Flying Objects / noise	12 High	▪ Eye, and Ear protection required for all tasks involving the cutting of tile or concrete – L3 ▪ Isolate area where possible – L2 ▪ Make hearing protection available to other trades where isolation is not possible – L3	WH&S Reg 2011, S57 Noise CoP	4 Low
	Work at Height >2 metres	16 Severe	▪ Manage Scaffold use in accordance with 3.07 Mobile Scaffold and 3.06 Scaffold sections of this PRR– L3 ▪ Manage Work at Height in accordance with Edge Protection and Working at Heights Sections of this Q030104 PRR – L3 ▪ Do not overload or alter scaffold erected by other trades – L2	WH&S Reg 2011, S79 and 225 AS 1576 Scaffold AS 4576 Scaffold	7 Medium
	Asbestos	16 Severe	▪ Manage asbestos in accordance with section 1.3 Work that is likely to involve, the disturbance of asbestos – L3 ▪ Notify Site Management immediately if any substance which could be asbestos is located and initiate the "Unexpected Finds" procedure – L3	WH&S Reg 2011, S81 Asbestos CoP Asbestos Removal CoP	7 Medium
	Hazardous Substance	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6	WH&S Reg 2011, S49 Haz Chem CoP	4 Low
8.11 Floor Finishing	Hot Works	12 High	▪ Manage Hot works in accordance with Hot Works section of this PRR – L3	WH&S Reg 2011, S35	4 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	4 Low
	Hazardous Substance	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, S49 Haz Chem CoP	4 Low

8.12 Civil Works	Plant and Equipment	14 Severe	▪ Manage Plant and Equipment in accordance with Use of Plant & Equipment - General section of this PRR. Ensure a CC Plant Operational Permit is completed and authorised before plant operation – L3	WH&S Reg 2011, S35 Plant CoP	7 Medium
	Hazardous Substances	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, S40 Haz Chem CoP	4 Low
	Manual Handling	12 High	▪ Manage Manual Handling in accordance with Materials Handling & Manual Handling sections of this PRR	WH&S Reg 2011, S60	4 Low
8.13 Landscaping	Plant and Equipment		▪ Manage Plant and Equipment in accordance with Use of Plant & Equipment - General section of this PRR. Ensure a CC Plant Operational Permit is completed and authorised before plant operation – L3	WH&S Reg 2011, S35 Plant CoP	
	Manual Handling		▪ Manage Manual Handling in accordance with Manual Handling section of this PRR – L3	Manual Tasks CoP	
	Sharps		▪ Make immediate area safe where possible and advise others in area of hazards where found – L2 ▪ Where possible sweep / shovel broken glass and remove from area. – L2 ▪ Manage as per Biohazard section of this PRR. Contact sharps hotline where a syringe is found – L3	WH&S Reg 2011, S40	
8.14 Tree Removal &/or Pruning	Plant and Equipment		▪ Operators do not wear loose clothing, jewellery, rings or watches – L1 ▪ The chipper is fed off the centre line and from the kerb side (where practical) – L2 ▪ Two workers operate the chipper at all times – L3 ▪ Manage Plant & Equipment in accordance with Use of Plant & Equipment section of this PRR – L3	WH&S Act 2011 S21 COP Plant AS 4273	
	Work at Height		▪ Manage Working at Heights in accordance with Working at Heights section of this PRR – L3	WH&S Reg 2011, S217	
	Hazardous Substances		▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Task specific SWMS to consider if health surveillance is required – L3	WH&S Reg 2011, S49 Construction CoP	
	Noise		▪ Ensure appropriate ear protection is worn during plant operation – L3. ▪ Task specific SWMS for trades indicate health surveillance is not required for task – L3	WH&S Reg 2011, S57 Noise CoP	
	Flying Objects		▪ Ensure safety glasses or goggles are worn are worn – L3	WH&S Reg 2011, S40	
	Manual Handling		▪ Ensure drop down table is fitted at the rear. – L2 ▪ Manage Manual Handling in accordance with Manual Handling section of this PRR – L3	WH&S Reg 2011, S60 Manual Tasks CoP	
	Cuts		▪ Ensure safety gloves and protective trousers cut-resistant leg protection are worn – L3	WH&S Reg 2011, S40	

Activity / Item	Hazards / Aspects & Risks / Impacts	Initial Risk Score	▪ Control Measures / Risk Treatment	Legislation, Codes of Practice, and Guidelines (including other available information on hazard / risk)	Residual Risk Score
9. **WORKPLACE ENVIRONMENT**					
9.1 Lighting	Slips and Trips	12 High	▪ Emergency lighting shall be provided in designated access and egress paths and directly above and in front of switchboards. The lighting shall be hard wired and provide an average of 20 lx at 900mm above floor level along the centre line of the corridor containing the emergency luminaires (or other means as specified in AS/NZS 3012:2019)– L2 ▪ Appropriate task specific lighting is to be used where required. – L2 ▪ Emergency Exit lighting is to be installed as per AS 3012:2019. All exit signs are to be hard wired illuminated green emergency exit signs as per the Australian Standard.	WH&S Reg 2011 S109 Construction CoP Work Environment CoP, S2.6 AS 3012 Electrical	8 Medium
9.2 Noise	Loss of Hearing	14 Severe	▪ Health surveillance shall be complete where a WMS / risk assessment indicates a medium or greater risk of noise exposure – L3 ▪ Maintenance of plant & equipment as per manufacturer's requirements – L2 ▪ Isolate noisy works from others where possible – L2 ▪ Ensure appropriate ear protection is worn if noise is expected to exceed daily exposure limits or manufacturer requirement – L3	WH&S Reg 2011, S57 Construction CoP, S7.1 Noise CoP AS 2436 Noise	7 Medium
	Public Disturbance	12 High	▪ Noisy works to be completed as per local legislative & regulatory authority requirements taking into consideration adjacent premises – L3 ▪ Industrial, city or town centre areas - Monday to Saturday 6am to 8pm; Sunday and Public Holidays 6am to 8pm – L3 ▪ Any other area where work is complete within two weeks - Monday to Saturday 7am to 8pm; Sunday and Public Holidays 8am to 8pm – L3 ▪ Any other area where work is not complete within two weeks - Monday to Saturday 7am to 6pm Sunday and Public Holidays Building work must not exceed Noise Standard – L3	Env Protection Act 1997 Environmental Policy 2008 Construction CoP, S7.1	8 Medium
9.3 Materials Handling	Congested access and egress	14 Severe	▪ Ensure a Q070409 Designated Plant Setup Location form has been completed and a copy of the completed document and applicable drawings available for consideration by the site team and Subcontractors. ▪ Ensure loading areas are designated on the internal traffic management plan – L2 ▪ Ensure good access to loading areas at all times– L2 ▪ Use mechanical means where possible to unload or transport materials– L2 ▪ All loads to be secured during transportation on site. – L2	WH&S Reg 2011, Sections 40 Work Environment CoP, S2.1	7 Medium
	Manual Handling	14 Severe	▪ If mechanical means are not possible then manage Manual Handling requirements in accordance with the Manual Handling section of this PRR – L3	WH&S Reg 2011, Sections 60 Manual Tasks CoP	8 Medium

	Materials falling	16 Severe	▪ Where material does not have designated lifting points a ticketed dogman shall ensure loads are secure. – L3 ▪ Site-specific WMS shall identify exclusion zones for material being moved. Exclusion zones are to be established and adhered to prior to commencing unloading activities. This is to include arrangements for the driver – L3 ▪ Trucks delivering structural steel are to have gates or posts fitted to both sides of the trailer designed to prevent sideways load forces. Steel elements are to extend no more than half their height above the top of the gates/posts. ▪ Loads that are delivered in multiple layers are to be strapped down in a manner to prevent falling objects as restraints are removed. In some situations this may require strapping of each layer. ▪ Loads are to arrive pre-slung as far as reasonably practical ▪ Every delivery to unloaded by CC or crane crew is to be assessed by CC and/or the crane crew prior to unloading. Any load deemed unsafe to unload is to be sent away and is not permitted to be unloaded until presented in a safe manner ▪ A CC plant operation permit is not required where a Hiab / Truck mounted crane is unloading from the truck to the ground in a designated loading/unloading area. ▪ If the Hiab / Truck mounted crane is being used to lift materials to an area other than the ground, or is setting up in a non-designated loading/unloading area a *S030411b Mobile Crane Operation Permit* must be completed by the CC staff member responsible for the works and the plant operator prior to use. This permit verifies the operator's competence and communicates specific hazards and control measures.	Falls CoP Construction CoP, S7.6	7 Medium
9.4 Manual Handling	Muscular / Skeletal injury	12 High	▪ Where moving an object in the workplace ensure the access is clear – L2 ▪ Evaluate the size / weight of the load and if required, use mechanical aids or get help. – L2 ▪ Wear all recommended or specified PPE e.g. gloves, goggles, masks, footwear, etc. – L3 ▪ Before you start to lift; ensure that your stance is wide, comfortable and balanced. – L2 ▪ Position your body by bending your legs and not your back, so that it is as close as possible to the load. – L2 ▪ When ready take a firm but comfortable grip and tighten your stomach muscles as you begin lifting. – L2 ▪ Ensure that you use your leg muscles during the lift , maintain a straight lower back and keep your shoulders parallel– L2 ▪ Avoid twisting. If a turn is required while holding object, use leg muscles to shuffle feet around to the required direction. – L2 ▪ Avoid repetitive motions – L2; ▪ When lowering an object use the above sequence but in reverse order and on completion dispose of all unwanted or contaminated PPE. – L3	WH&S Reg 2011, S60 Manual Tasks CoP Work Environment CoP, S2.1	4 Low
	Laceration	12 High	▪ Ensure protective trousers cut-resistant leg protection is worn – L3 ▪ Where handling material with sharp edges rigger or other suitable gloves shall be worn – L3	WH&S Reg 2011, S40	4 Low
	Trip / slip / fall	12 High	▪ Maintain housekeeping at all times. – L2	WH&S Reg 2011, S40	4 Low

9.5 Penetrations	Work at height -Falling object / Falling person	16 Severe	▪ Manage Working at Heights in accordance with Working at Heights section of this PRR – L3 ▪ All penetrations larger than 100 mm must have fall prevention. – L2 ▪ Mesh only to be cut when and where materials are being installed. – L3 ▪ Penetrations shall be adequate for the circumstances applying, securely covered and marked with 'Danger –Penetration Below' – L3 ▪ Ensure pit covers are secure, where not practical implement other form of barricading / exclusion – L3	WH&S Reg 2011, S217 Falls CoP, S3.6 and 3.7 Construction CoP, S7.6	7 Medium
9.6 Hazardous Substances / Dangerous Goods (HSDG)	Burns	12 High	▪ Ensure adequate segregation is provided for incompatible substances; – L2 ▪ Storage to be secure well ventilated, cool, dry designated Hazardous substance storage with appropriate signage / bunding / isolation; Separation matrix displayed as per PRR; MSDS available at or adjacent to; and PEP, First aid kit and competent person to be available nearby – L2 ▪ Ensure containers holding hazardous substances are labelled, in suitable containers, and include relevant information; – L3 ▪ Storage shall be in a designated area and in accordance with the National Code of Practice for the Control of Workplace Substances. – L3	WH&S Reg 2011, Sections 49 and 53 Haz Chem CoP Construction CoP AS 3833 Dang Substances	4 Low
	Fire / Explosion	14 Severe	▪ In-service Fire Extinguisher to be located adjacent to, or in immediate work area where site-specific SWMS based on MSDS indicates medium or greater risk of fire or explosion – L3 ▪ Ensure stored quantities of Dangerous Goods do not exceed Schedule 1 of the National Standard for the Storage and Handling of Workplace Dangerous Goods – L3	WH&S Reg 2011, Sections 40 and 49	7 Medium
	Illness / Disease	12 High	▪ All Hazardous Substances are registered including maximum quantities, location of storage, MSDS date, risk score and applicable WMS for the use of the product – L3 ▪ Site-specific SWMS must identify any need for health surveillance and must be defined further on each contractors and CC's master Q070602 Hazardous Substances Register – L3 ▪ Hazardous Substances shall be used only in well ventilated areas unless appropriate PPE is worn i.e. SCUBA breathing apparatus, as defined in site-specific SWMS. – L3 ▪ Sub-contractors must maintain a register of Risk Assessments / Safety Data Sheet (SDS) < 5 years D.O.M in the Simpel SWMS/Safety Plan module of Simpel; ▪ Ensure personnel are trained in the above requirements; – L3 ▪ Ensure first aid, spill and fire response equipment is available to manage all products on the project; – L3 ▪ Appropriate spill kit/s to be available for products in use outside hazardous substance storage area; – L3 ▪ Appropriate storage must be outlined in the SWMS in accordance with the SDS – L3	WH&S Reg 2011, Sections 49 Haz Chem CoP Construction CoP AS 3833 Dang Substances Environmental Act 1997 Environmental Policy 2008 Waste Act 2001 Environmental Haz Act 1985	4 Low
	Eye Injury	14 Severe	▪ Safety Glasses / goggles generally to be worn when working with hazardous substances; unless a site-specific WMS based on MSDS, Section 8 defines alternative PPE requirements – L3	WH&S Reg 2011, S44 Haz Chem CoP	7 Medium

	Exposure	12 High	▪ For all substances purchased or brought to site a Hazardous Substance and Dangerous Good Register shall be maintained by the relevant Sub-contractors in the Simpel SWMS/Safety Plan Module. Each Hazardous Substance shall be assessed via a Risk Assessment/SWMS/JSA, to manage: o associated risks o safe use o environmental protection o PPE requirements o storage o emergency management (e.g., spill kit and fire response) o health surveillance requirements o staff training o and include an attached SDS, dated in the last 5 years. ▪ CC shall ensure during S070303 Contractor Review that an appropriate Work Method Statement (WMS) is developed defining safe storage, use, and disposal for all products identified on the Q070602 Hazardous Substances & Dangerous Goods Register as **Medium to High**; – L3 ▪ In an emergency, relevant personnel have access to the SDS via their Simpel profile or an internet search (e.g., Google) at all times via a phone or tablet. ▪ All Construction Control staff, including First Aiders and Emergency Controllers have access to all relevant Hazardous Substances documents via Simpel and the internet. ▪ Standard construction site activities are not likely to see any common hazardous substances used exceed the quantities prescribed in Schedule 11 of the WHS Regulations. If the project is likely to have an uncommonly high quantity of a Hazardous Substance or Dangerous Goods a Risk Assessment is to be conducted to consider the management and storage of the product. ▪ Sub-contractors are to ensure adequate segregation of incompatible substance and containers holding hazardous substances are labelled to include: o product name o basic safety and environmental information including any risk and safety phrases; and o if the substance is a Dangerous Good – class label subsidiary risk label and packing group	WH&S Reg 2011, Sections 49 Haz Chem CoP Construction CoP AS 3833 Dang Substances Environmental Act 1997 Environmental Policy 2008 Waste Act 2001 Environmental Haz Act 1985	7 Medium
9.7 Client / Public Interface	Construction works around general public	14 Severe	▪ Approved Temporary Traffic Management Plan (TTMP) implemented for project works. Pedestrian traffic diverted around site via the TTMP – L3 ▪ Entry gates to be maintained even and tidy to mitigate risk of public / client rolling ankle on uneven ground. Weekly Project Inspection record to be used to assess areas; – L3 ▪ Construction works in public areas to be isolated to mitigate exposure to works; – L2 ▪ Construction works to be undertaken within designated hours only and within confines. – L2 ▪ Security surveillance of project / surrounding area where possible. – L3 ▪ Hoarding/fencing of 1.8 metres height and continuous down to the ground made of 50mm chain wire mesh 2.5mm thick to be installed around project perimeter with appropriate construction signage. – L3	WH&S Reg 2011, S44 Haz Chem CoP	7 Medium

	Construction works around client activities	12 High	▪ Client to inform CC Site Management of events which may adversely impact on construction works. ▪ CC to inform Client Rep of events which may adversely impact on client operations. – L3 ▪ Client representative to contact CC Project Manager where an emergency evacuation or significant incident may impact on the project works. – L3 ▪ Construction works are not to impact on public activities from adjacent areas. Any issues to be managed on a situation by situation basis. – L3 ▪ Approved Project Emergency Plan to be developed and implemented detailing client – – L3 - Specific induction requirements; - Emergency protocols; - Lock-out arrangements; - Hazard / Dangerous Goods Facilities that may be impacted; - Restricted or Sensitive Areas; - Security Arrangements; - Permit systems - Critical infrastructure that may be supporting life or processes	WH&S Reg 2011, Sections 35 and 308 Construction CoP, S7.4	4 Low

9.8 Respirable Crystalline Silica (RCS) Management	RCS injury to workers or bystanders	12 High	▪ A task specific Risk Assessment or SWMS must be undertaken where tasks are known to create a silica hazard. - L3 ▪ Respirable Crystalline Silica (RCS) Management must be undertaken when any masonry cutting/coring/drilling/jackhammering is undertaken. Exclusion Zones, Wet cut or Hepa filter vacuum and PPE controls must be used during any drilling/coring/cutting/jackhammering of concrete (or similar material containing silica). After these works have been undertaken the contractor will clean the area of all slurry and dust and put all captured silica dust, either wet or dry, into a plastic bag and they will place this bag into the main site bin. The smaller bins supplied around the project site are not to be used at any time for this purpose. **Wet Cutting** ▪ Wet cutting with purpose built attachments wherever reasonably practicable - L2 ▪ Clean up any slurry produced to prevent the slurry from drying and releasing silica dust into the air. Wet slurry can be cleaned up using shovels or a wet vacuum equipped with a HEPA filter - L2 ▪ Do not wet cut where run-off can cause damage or is an environmental concern - L2 **Vacuum Cutting** ▪ Vacuum cut wherever wet cutting is not possible. - L2 ▪ For best results, use a vacuum with an actuator switch that allows the vacuum to be powered on and off using the tool - L2 ▪ Turn the vacuum off and on regularly to reduce dust build-up on the HEPA filter, if it is not self-cleaning - L2 ▪ Change vacuum-collection bags at least as often as the manufacturer recommends - L2 ▪ Avoid exposure to dust when changing vacuum bags and cleaning or replacing air filters by ensuring PPE remains in place during these tasks - L2 ▪ Works that may create Silica dust must be isolated from other workers, the use of signage, barricades, exclusion zones, PPE and administrative controls may be considered as part of the task specific risk assessment. - L2 **Cutting Area** ▪ No cutting activities to be undertaken until the required set up is complete and inspected by the relevant supervisor. – L3 ▪ Isolate the cutting area from personnel not directly involved with cutting tasks - L2 ▪ Install signage advising of the restricted access due to silica hazards as well as PPE requirements for the area - L2	WH&S Reg 2011, Division 3.2.7 Haz Chem CoP	4 Low
	Inappropriate selection of PPE	12 High	▪ Wear PPE as recommended in the relevant SDS and/or as indicated in the relevant Risk Assessment. ▪ Where a Risk Assessment deems it necessary, to avoid exposures in excess of the acceptable levels, wear air-purifying respirators with HEPA filters or approved dust respirators. - L2 ▪ Contractor documentation must include appropriate instruction on the selection and use of PPE – L3 ▪ Wear proper protective clothing, e.g. long pants and long- sleeved shirts, to avoid contact with product. - L3 ▪ Use goggles or safety glasses as eye protection – L3 ▪ Wear gloves to minimise continued contact with skin – L3	WH&S Reg 2011, Division 3.2.7 Haz Chem CoP	4 Low

	Health Surveillance	12 High	▪ Task Specific Risk Assessment shall identify any need for health surveillance and shall be defined by the contractor if required - L3 ▪ Respirable silica dust is listed on Schedule 14, Table 14.1 of the WH&S Regulations as such health surveillance is required for activities which have been tested and are known to exceed the legislated exposure limits. ▪ Results of monitoring and surveillance shall be available via the project management team; and where near exposure limits, health surveillance and further monitoring shall be complete and additional control measures implemented to reduce levels to a practical level – L2 ▪ Where a worker is exposed or where an assessment indicates a significant risk of exposure health surveillance shall be undertaken – L2	WH&S Reg 2011, Division 3.2.7 Haz Chem CoP	4 Low

Activity / Item	Hazards / Aspects & Risks / Impacts	Initial Risk Score	Control Measures / Risk Treatment	Legislation, Codes of Practice, and Guidelines (including other available information on hazard / risk)	Residual Risk Score
10. **EMERGENCY / MEDICAL**					
10.1 Bomb Threat	Explosion		▪ Bomb threat checklist to be available at reception – L3 ▪ Obtain as much information as possible, Call 000 – L3 ▪ Commence emergency procedures – L3 ▪ Instigate critical incident management procedure, where required – L3 ▪ Contact CC Site Manager / General Foreman in the event of an emergency – L3	WH&S Reg 2011, Sections 51 and 53 Construction CoP, S7.4 AS 3745 Emergency	
	Mental Trauma		▪ CC shall Initiate trauma management where required to affected workers	WH&S Reg 2011, S43	
	Adjacent building / public		▪ CC project management shall communicate all potential serious events that may affect adjacent structures as soon as possible following and incident. – L3 ▪ Appropriate contact details of adjacent buildings shall be included in Project Emergency Plan. – L3	WH&S Reg 2011, Sections 43 AS 3745 Emergency	
10.2 Trench / Excavation collapse	Crush injury	16 Severe	▪ Notify emergency CC personnel of situation and check excavation for signs of workers and severity of collapse [Are they trapped, can you see their full body or just hardhat]; ▪ <u>If worker/s is trapped</u>: - Notify emergency services for assistance; - Assess the excavation for potential of further collapse; if so: - Shoring may be required to further stabilise the excavation; - Battering the excavation to eliminate further collapse - If safe to do so commence soil removal taking into consideration the position of trapped worker; clearing soil from around the worker; - Expose worker and commence first-aid assessment and if needed treatment for worker. A worker should not be removed if there is potential for further injury or life threatening situation. Wait for Emergency Services to remove worker. ▪ <u>If worker/s is not trapped</u>: - Isolate the incident zone and notify nearby personnel within the affected area; - Notify Site Foreman / Manager	WH&S Reg 2011, S43 Construction CoP AS 3745 Emergency	7 Medium
10.3 Forecast Storm Warning	Damage to property / workers from unrestrained materials or water inrush	14 Severe	▪ Assess the severity of storm using data from BOM ▪ If required complete CC BMS S030202 Environmental Condition Checklist to identify and prepare for site risk treatment options. E.g. identify loose or vulnerable materials plant and/or equipment. ▪ Assess site sediment control implemented, remove material from zones prone to flooding and secure site. ▪ Where required commence emergency evacuation of area / site and/or isolate specific areas.	WH&S Reg 2011, S43 Construction CoP AS 3745 Emergency	7 Medium

10.4 Fire / Explosion	Fire / Explosion	16 Severe	▪ Storage of substances in accordance with the National Code of Practice for the Storage and Handing of Dangerous Goods – L3 ▪ Include Hazardous Substance / Dangerous Goods storage areas on Internal Traffic Management Plan ▪ Ensure quantities of Hazardous Substance / Dangerous Goods do not exceed the quantities prescribed in Schedule 11 of WHS Regulations. If a large quantity is required to be stored on site, complete a Risk Assessment to manage risks – L3 ▪ Contact CC Site Manager / General Foreman in the event of an emergency and commence emergency procedures as per PEP. – L3 ▪ Ensure equipment is inspected weekly by site Foreman, 6 monthly by qualified fire protection provider ▪ Ensure no combustible material is present in the immediate areas – L3	WH&S Reg 2011 Sections 43, 51 and 53 Construction CoP, S7.4 AS 3745 Emergency	7 Medium
	Adjacent building / public	14 Severe	▪ CC project management shall communicate all potential serious events that may affect adjacent structures as soon as possible following and incident. – L3 ▪ Appropriate contact details of adjacent buildings shall be included in Project Emergency Plan. – L3	WH&S Reg 2011, Sections 43 AS 3745 Emergency	7 Medium
	Inadequate / Inappropriate Fire Fighting Equipment or trained personnel	14 Severe	▪ CC shall provide appropriate fire-fighting equipment at / adjacent to potential significant sources of fire / ignition (TPB, hazardous substance / dangerous goods facilities, amenities, plant as per manufacturers guidance) and at amenities exit / entry points unless otherwise assessed on completion of the PEP, Appendix (K) Emergency Response Equipment Risk Assessment. – L2 ▪ CC shall ensure at all times an appropriately trained and competent supervisor is present with Emergency Controller and Fire Fighting training / competency – L3 ▪ The Project Emergency Plan, Appendix (K) shall be complete by a competent Emergency Controller and reviewed quarterly to ensure fire-fighting equipment is adequate / appropriate in relation to the nature of the project, work, hazards and workers. – L3	WH&S Reg 2011 S43 AS 3745 Emergency	7 Medium
	Bushfire	12 High	▪ Commence emergency procedures and call 000 where required and evacuate site. – L3	WH&S Reg 2011 Sections 43	4 Low
	Environmental Fire water	12 High	▪ Provide appropriate hazardous substance / dangerous goods facilities with suitable bunting, fire-fighting equipment, and signage. – L2 ▪ The Project Emergency Plan, Appendix (K) shall be complete by competent Emergency Controller and reviewed quarterly to ensure an appropriate spill-kit is provided in relation to the nature of the project, work, hazards and storage facilities. – L3 ▪ Manage Environmental Fire water as per emergency services direction or contain and dispose appropriately by external contractor. – L3	WH&S Reg 2011 Sections 40 Environmental Act 1997 Environmental Policy 2008	4 Low
10.5 Suspended worker	Suspension trauma	16 Severe	▪ Locate worker/s requiring rescue and identify potential hazards / constraints ▪ Notify Foreman and Emergency Controller of the incident requiring emergency response; ▪ Where person is suspended refer to Retrieval Plan attached to Fall-arrest equipment permit ▪ Assess the ability to rescue worker/s using available plant / equipment including associated risks ▪ Initiate rescue using Retrieval Plan and/or WMS and available plant/equipment directed by EC ▪ If unable to retrieve worker/s, or worker is seriously injured contact Emergency Services	WH&S Reg 2011, S43 Construction CoP Falls CoP AS 3745 Emergency	7 Medium

10.6 Confined Space Incident	Asphyxiation	16 Severe	▪ Notify Foreman and Emergency Controller of the incident requiring emergency response; ▪ Assess the ability to rescue the worker using confined space emergency rescue plan developed for the specific confined space documented within the WMS and Confined Space Permit. ▪ Determine if the worker/s requires urgent medical attention or is unavailable to be rescue. ▪ Initiate rescue if possible and appropriately trained, using confined space rescue plan ▪ If unable to be rescued or urgent medical attention is required contact Emergency Services	WH&S Reg 2011, S43 Construction CoP AS 3745 Emergency	7 Medium
10.7 Plant Incident	Being hit by mobile plant	16 Severe	▪ Determine if any worker/s are injured and make area safe ▪ Apply first-aid if necessary and safe to do so Isolate area and contact PM and Systems Manager. Preserve site conditions until authorisation received from regulatory authority to move plant / equipment. ▪ Arrange for any structures to be recertified where applicable (formwork, scaffold, adjacent structures) ▪ Arrange for the vehicle or plant obstruction to be moved ▪ If situation requires Emergency Services EC / Project Manager to contact and coordinate incident	WH&S Reg 2011, S43 Construction CoP Plant CoP AS 3745 Emergency	7 Medium
10.8 Gas Leak	Asphyxiation	16 Severe	▪ Ensure no smoking or naked flames on or near the site – L2 ▪ Evacuate all personnel to a minimum distance of 200 meters of leak – L2 ▪ Commence emergency evacuation procedures – L2 ▪ Call 000, where required. – L3 ▪ Contact CC Site Manager / General Foreman in the event of an emergency – L3	WH&S Reg 2011 S43 AS 3745 Emergency	7 Medium
	Explosion	16 Severe	▪ Commence emergency evacuation procedures – L1 ▪ Ensure no sources of ignition sources are present in the immediate area – L2	WH&S Reg 2011 Sections 43, 51 and 53	7 Medium
	Mental Trauma	14 Severe	▪ CC shall Initiate trauma management where required to affected workers – L3	WH&S Reg 2011, S43	7 Medium
	Adjacent building / public	14 Severe	▪ CC project management shall communicate all potential serious events that may affect adjacent structures as soon as possible following and incident. – L3 ▪ Appropriate contact details of adjacent buildings shall be included in Project Emergency Plan. – L3	WH&S Reg 2011, Sections 43 AS 3745 Emergency	7 Medium
10.9 Partial Structural Collapse	Serious Injury / Illness	14 Severe	▪ Determine if any worker/s are injured and make area safe ▪ Isolate area and report to CC Site Management / Emergency Response Team ▪ Make safe with minimum 10m exclusion zone. Where required commence Evacuation Procedures ▪ Contact Emergency Services, WorkSafe, Project Director, HSE Manager, Systems Manager and commence incident report & investigation ▪ Call structural engineer to assess situation and provide advice on safe remediation	WH&S Reg 2011, S43 Construction CoP AS 3745 Emergency	7 Medium

10.10 Hazardous Substance Incident	Serious Injury / Illness or Exposure	14 Severe	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Q070603 Project Emergency Plan (PEP) to be developed by a competent Emergency Controller and maintained throughout project with quarterly reviews; – L3 ▪ Storage of substances in accordance with the National Code of Practice for the Storage and Handing of Dangerous Goods; – L2 ▪ Provide protection for all storage areas; – L2 ▪ Take immediate action where incident including: – L3 - Isolate personnel from spills; - Consult Safety Data Sheet; via their Simpel profile or an internet search (e.g., Google) via a phone or tablet. - Contain spill in accordance with SDS with spill kit or other suitable means; ▪ Commence emergency procedures and call 000, where required.	WH&S Reg 2011 s40 & 43 Haz Chem CoP AS 3833 Dangerous Subs AS 3745 Emergency	7 Medium
	Fire	16 Severe	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ The Project Emergency Plan, Appendix (K) shall be completed by competent Emergency Controller and reviewed quarterly to ensure fire-fighting equipment is adequate / appropriate in relation to the nature of the project, work, hazards and workers. ▪ Provide appropriate fire-fighting equipment at / adjacent to potential significant sources of fire / ignition (TPB, hazardous substance / dangerous goods facilities, amenities, plant as per manufacturers guidance) and at amenities exit / entry points unless otherwise assessed on completion of the PEP, Appendix (K) Emergency Response Equipment Risk Assessment. – L3 ▪ Ensure equipment is inspected regularly, weekly by site Foreman, 6 monthly by qualified fire protection provider – L3	WH&S Reg 2011 S51 Construction CoP, S7.4 AS 3745 Emergency	7 Medium
	Adjacent building / public	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ CC project management shall communicate all potential serious events that may affect adjacent structures as soon as possible following and incident. – L3 ▪ Appropriate contact details of adjacent buildings shall be included in Project Emergency Plan. – L3	WH&S Reg 2011, S43 Construction CoP AS 3745 Emergency	4 Low
	Release to Environment	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6	WH&S Reg 2011 S40 Environmental Act	4 Low

10.11 HV/LV electrical service strike	Electrocution	16 Severe	▪ Establish a minimum 10m exclusion zone around incident ▪ Operator to remain in cabin until assessment of the cable to be determine whether the line is live or not ▪ If electrical cable is live and able to be isolated: - Locate electrical source and isolate electrical circuit - Contact Emergency services for assistance - If possible try and break the item of plant contact with the cable - Undertake first-aid treatment as required ▪ If electrical cable is live and unable to be isolated: - Contact Emergency services for assistance - Does the operator need to leave the cabin for a safety reason i.e. fire or life threatening reason? a) If No - Operator to remain in cabin; b) If Yes - Do not touch the equipment and the ground at the same time. Operator is to shuffle away from the item of plant with feet together until at least 10m away ▪ Preserve site conditions until authorisation received from regulator to re-enter area	WH&S Reg 2011, S43 Construction CoP Electrical CoP AS 3745 Emergency	7 Medium

Activity / Item	Hazards / Aspects & Risks / Impacts	Initial Risk Score	Control Measures / Risk Treatment	Legislation, Codes of Practice, and Guidelines (including other available information on hazard / risk)	Residual Risk Score
11. ENVIRONMENTAL					
11.1 General Waste	Waste entering stormwater / environment	12 High	▪ Green waste shall not be dumped in areas affected by stormwater. – L1 ▪ Projects shall report on recycled waste in ongoing project reports to client where required and in S020207 Project BMS Performance Meetings. – L3	Environmental Act EPA Env Policy ISO 14001 Env Mgt	4 Low
11.2 Heritage land / building and/or archaeology	Damage to heritage land / building and/or archaeology		▪ Where a project is identified by the client or regulatory authorises as a historical location project shall be surveyed in consultation with the relevant groups to assess and control any Indigenous and Historic Heritage identified on the site. – L3	Environmental Act EPA Env Policy ISO 14001 Env Mgt	
11.3 Water Quality	Contaminate d Water	12 High	▪ If sediment control measures on/or surrounding site are breached the site shall contain the water (as far as practical) using suitable means until appropriate sediment control is put in place. EPA and Local Council shall be contacted where water cannot be contained. – L2 ▪ Waste water contractor that removes material from site shall have appropriate controls for emergencies including controls for vehicle malfunction and tip over. – L2 ▪ Contaminated soil shall be isolated / contained and removed by an approved external contractor. An external consultant shall complete an assessment and report on the safe removal and make good of area. CC Shall implement controls developed from environmental assessment. – L3 ▪ EPA / Client / WorkSafe / Council shall be contacted where imminent risk to environmental impact – L3	ACT Environmental Act 1997 EPA Env Policy EPA Water Policy ISO 14001 Env Mgt	4 Low
11.4 Soil Quality	Contaminate d soil	15 Severe	▪ Hazardous Substance to be managed as per the Hazardous Substance Section of this PRR – L3 ▪ Contaminated soil shall be isolated / contained and removed by an approved external contractor. An external consultant shall complete an assessment and report on the safe removal and make good of area. CC Shall implement controls developed from environmental assessment. – L2 ▪ EPA / Client / WorkSafe / Local Council shall be contacted where imminent risk to environmental impact. ▪ Concrete washout areas shall have appropriate matting / bunding to contain spills. Concrete pumping contractor shall have appropriate controls for pump out area breaching / rupturing and/or area leaking into drain-ways. – L2 ▪ Where fire extinguishing equipment is used material is to be disposed of as per MSDS, including fire water if applicable. – L2 ▪ All spills shall be reported immediately to CC site management. CC shall manage spills as per specific MSDS and report to EPA, WorkSafe and local council. – L3	Environmental Act EPA Env Policy ISO 14001 Env Mgt	8 Medium

11.5 Air Quality	Contaminated air	15 Severe	▪ Noise to be managed as per Noise, Section of this PRR – L3 ▪ Dust shall be managed as per Dust Section of this PRR – L3 ▪ Hazardous Substance to be managed as per the Hazardous Substance Section of this PRR – L3 ▪ Work areas shall be cleaned daily. CC shall complete a S030402 Project HSE Inspection Record to review areas weekly – L3 ▪ Q070303 Contractor Review shall identify works with dusty conditions and ensure suitable controls are implemented; including wetting of dust using water where possible and/or the use of appropriate dust masks and eye protection in extreme dusty conditions – L2 ▪ Plant and equipment shall be inspected, used and maintained as per manufacturer's guidelines to mitigate noise, vibration, and exhaust pollution. CC shall complete a S030402 Project HSE Inspection Record to review plant / equipment weekly – L2 ▪ CC S030411 Plant Operations Permit Induction shall be complete on all major plant / equipment prior to operation to verify design, inspection and maintenance compliance with AS/NZS and system requirements – L3 ▪ Air monitoring shall be undertaken on activities within the Q030104 Project Risk Register (PRR) with an initial air pollution risk score of high or severe – L3 ▪ Where atmospheric contaminants are identified on site, perimeter testing shall be complete to ensure air pollution is not exceeded on the lease boundary of the land which the air pollution is being permitted ▪ Noisy works to be completed as per local legislative & regulatory authority requirements as defined within CC Procedure 3.02 Environmental Management taking into consideration adjacent premises. City: 7 am – 10pm [60 db(A)]; 10pm-7am [50db(A)]. Residential and Group Centres decrease by 5db(A) ▪ Any noisy work shall be complete outside of work hours and coordinated with area management; ▪ CC shall identify noisy works during S070303 Contractor Review and ensure as far as practical work is isolated and engineering controls are documented within Safe Work Method Statements ▪ CC shall review noisy works on site to ensure appropriate isolation and implementation of engineering controls using the S030402 Project HSE Inspection Record ▪ Noise monitoring shall be complete by Construction Control on project perimeter in accordance to ensure noise is not exceeded on the lease boundary of the land which the noise is being permitted. Noise monitoring shall occur on a minimum annual basis across all projects; on request of client or Project Director; or as a result of incident investigation ▪ Occupational noise monitoring to be undertaken on Q030104 Project Risk Register (PRR) with an initial noise risk score of high or severe	Environmental Act 1997 Air Policy 1999 EPA Env Policy 2008 ISO 14001 Env Mgt	8 Medium
11.6 Habitats (protected flora / fauna)	Damage to Flora / Fauna	12 High	▪ Flora / Fauna shall be protected where required by BA/Client with appropriate fencing. Where Flora / Fauna are impacted, EPA and/or client shall be contacted on appropriate action forward. ▪ All trees not to be removed from the site or adjacent verges are to be protected. Trees are to be fenced to protect them from damage from plant and equipment during the construction process.	Environment Protection and Biodiversity Conservation Act Environmental Act ISO 14001 Env Mgt	4 Low
11.7 Resource Depletion Water, Energy, Paper, etc	Excessive resources used	12 High	▪ Recycling to be removed by external contractor and report provided to Project Manager. ▪ Resource depletion shall be considered during the design phase of construction. This shall be documented in the Design Risk Analysis.	Environmental Act EPA Environmental Policy ISO 14001 Env Mgt	4 Low

11.8 Hazardous waste (Scheduled / Industrial)	Industrial waste release into environment	12 High	▪ Industrial hazardous wastes (asbestos), scheduled hazardous wastes (PCBs and OCPs) and/or Liquid hazardous wastes shall be removed by a licensed waste removal contractor with appropriate environmental authorisations. Evidence of appropriate removal / disposal shall be maintained by site	Environmental Act EPA Env Policy	4 Low
11.9 Hazardous Substance Waste	Release to Environment	12 High	▪ For the management of Hazardous Substances or a Hazardous Substance Incident please see section 9.6 ▪ Projects with hazardous substances shall have an appropriate storage area with adequate bunding to hold all substances within area and any flame retardant used to extinguish flames; suitable spill kits are to be readily available on site– L2 ▪ Projects with concrete pours shall have an appropriate concrete washout area defined with adequate bunding to hold material and spills; All concrete slurry from pours, cuts and drills shall be contained and removed ▪ Projects shall have appropriate paint washout facilities with required water storage, spinning drums, and filters. Paint waste and wash waters shall not be discharged to the stormwater system or drain ways. ▪ Paint Contractor shall ensure all washout liquids are filtered through fabric into appropriate recycled liquid container. Filters shall be disposed as clean out waste bin located in the paint washout area. ▪ Projects which require concrete and paint washout areas shall ensure subcontractor or other independent contractor removes waste as per Hazardous Waste Policy requirements and provides report / record of removal back to manufacturer or approved waste disposal facility.	Environmental Act Hazardous Waste Policy EPA Environmental Policy ISO 14001 Env Mgt	4 Low

ATTACHMENT F – CONSTRUCTION CONTROL PROJECT EMERGENCY PLAN

Project Emergency Plan

Diggings Terrace – Lot 768

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Project Emergency Plan (PEP) Review Record

The Project Emergency Plan (PEP) is to be reviewed every quarter by the project team, prompted by the *Q070801 Jan, April, July, Oct Project Quarterly Review*. The updated version of the PEP is to be uploaded to and communicated via Simpel. All team members are to acknowledge their roles and responsibilities electronically. Any changes to the relevant hard copy documents posted on the project Notice Board are also to be updated at the same time.

1. PURPOSE AND SCOPE

This PEP has been developed to document emergency arrangements to be implemented by the Emergency Response Team (ERT) during the construction of the Diggings Terrace project.

The PEP has been prepared to fulfil the requirements of the **WHS Regulation 2011 (ACT), Division 3.2.4 Emergency Planning, Section 43 - Duty to Prepare, Maintain and Implement an Emergency Plan,** and shall provide the Emergency Response Team and construction site personnel with key information to allow emergencies and incidents to be managed in an appropriate manner.

Some aspects of this plan have been developed using guidance from the below documents:

- AS 3745:2010 – *Planning for Emergencies in Facilities*
- SafeWork Australia – *Emergency Plans Fact Sheet*

The PEP is applicable for the whole life of the project; however shall be reviewed and updated as necessary, on a minimum quarterly basis to ensure the PEP reflects current works undertaken and foreseeable emergency scenarios during the phase of construction.

1.1. Risk Assessment

After reviewing the Project Risk Register and based on experience and professional judgement, CC believes that the following types of events have the potential to occur at the Diggings Terrace Project.

Event	Y	N	Comments	Event	Y	N	Comments
First Aid	☒	☐		HV/LV Service Strike	☒	☐	
Medical Treatment Incident	☒	☐		Confined Space Incident	☒	☐	
Evacuation	☒	☐		Environmental Incident	☒	☐	
Gas Leak	☒	☐		Plant overturn/ collision	☒	☐	
Fire	☒	☐		Suspended Worker	☒	☐	
Structural Collapse	☒	☐		Forecast Storm Warning	☒	☐	
Excavation collapse	☒	☐		Client nominated hazards	☐	☒	

This plan shall be modified to accommodate any new emergency situations that arise.

1.2. Definitions

Incident	An unplanned event resulting in, or having a potential to cause injury, illness, damage or threat to health, the environment, wellbeing, or company operations
Emergency	A sudden unforeseeable event that requires immediate action
Emergency Services	Services including Ambulance, Fire Brigade, Police
Evacuation	Clearance of personnel from site or given location
Dangerous Occurrence	A dangerous occurrence means an incident in relation to a workplace that exposes a worker or any other person to a serious risk to a person's health or safety emanating from an immediate or imminent exposure to: • an uncontrolled escape, spillage or leakage of a substance • an uncontrolled implosion, explosion or fire • an uncontrolled escape of gas, steam or a pressurised substance • electric shock • the fall or release from height of any plant, substance or thing • the collapse, overturning, failure or malfunction of, or damage to, any plant that is required to be authorised for use in accordance with the WHS Regulations • the collapse or partial collapse of a structure • the collapse or failure of an excavation or of any shoring supporting an excavation • the inrush of water, mud or gas in workings, in an underground excavation • the interruption of the main system of ventilation in an underground excavation or tunnel
Serious Injury or Illness	A serious injury or illness means an incident requiring the person to have: • immediate treatment as an in-patient in a hospital • immediate treatment for an amputation, a serious head or eye injury, a serious burn, de-gloving or scalping, a spinal injury, the loss of a bodily function or serious lacerations • medical treatment within 48 hours of exposure to a substance.

2. NOTIFICATION CLASSES

Incident Class	Medical Incident	Environmental Incident	Construction Incident	Notifications
1 Critical Incident	Fatality Severe Injury Ambulance, Regulator, or media attendance	Uncontained incident, requiring regulatory reporting Fire	Major threat to company reputation. Media attention or other parties involved.	Project Manager HSE Manager Managing Director and Project Director
2 Emergency	Multiple people requiring medical treatment / hospitalisation or Lost Time Injury	Site contained incident, requiring regulatory reporting	Minor threat to company reputation. Regulatory authorities and media involved.	Project Manager HSE Manager Managing Director and Project Director
3 Incident	Injury requiring medical treatment / hospitalisation	Site contained incident, not requiring regulatory reporting	No potential threat to company reputation. Opportunity for continuous improvement.	Project Manager HSE Manager Managing Director
4 Minor Incident	First Aid Only	Site contained incident, not requiring regulatory reporting	No potential threat to company reputation. Handled through normal business processes.	Project Manager

3. INCIDENT PRIORITIES

In the event of an incident the following priorities must be observed:

- Make the affected area safe
- Protect and rescue human life
- Protect environment, property and information
- Provide counselling and employee assistance to impacted people
- Notify appropriate parties
- Prevent unnecessary disturbance of the scene until an assessment on requirement to report the incident to regulator has occurred. If reporting to the regulator is required, do not disturb scene until clearance is provided by the regulator
- Restore disrupted services
- Complete Incident Investigation
- Implemented Risk Treatment Options
- Review effectiveness of Control Measures

4. KEY PROCEDURES & RELATED MANAGEMENT PLANS

4.1. Internal Procedures

CC BMS Procedure 7.06	Emergency Preparedness
CC BMS Procedure 3.01	Risk Management
CC BMS Procedure 3.02	Environmental Management
CC BMS Procedure 4.05	Incident Management

4.2. Related Management Plans

CC BMS Q070305	Project Management Plan

4.3. Related Business Management System Forms

CC BMS S040504	Senior Management Critical Incident Review
CC BMS S040503	Senior Management Serious Incident Root Cause Analysis
CC BMS S070601	Emergency Response Checklist
CC BMS Q070602	Hazardous Substances & Dangerous Goods Register
CC BMS S070608	First Aid Checklist
CC BMS S070609	Emergency Equipment Checklist
CC BMS S070301	Project Pre-commencement Review
CC BMS S070801	January, April, July, October Quarterly Review

5. RESPONSIBILITIES

Generally, appropriately trained members of the CC Project team will make up the Emergency Response Team (ERT). The Emergency Controller (EC) and the Deputy (DEC) will determine the composition of the ERT based on the stage of works, scope of the project and key risks identified in the Project Risk Register (PRR).

Name	Position	Role
Ben Eddy	PM	Project Manager
Matt Cranny	SM	Site Manager
Matt Cranny	EC	Emergency Controller
Michael Frino	DEC	Dept Emergency Controller
Chris Ison	HSE	HSE Advisor
Ben Eddy	FA	First Aider
Mel Petrie	DFA	Deputy First Aider
Chris Ison	MHFA	Mental Health First Aider

This register provides a record that identifies those with direct responsibilities within this plan. Relevant staff acknowledge their designated roles and accountabilities in the implementation of this plan electronically in Simpel.

5.1. Project Manager

- Approve and review the Project Emergency Plan
- Review assessments undertaken by first-aider and/or emergency controller for emergency assembly area and emergency response provisions (first-aid, emergency response and firefighting equipment)
- Maintain a working knowledge of the emergency management system, plan and processes
- Ensure the ERT is appropriately resourced as applicable to the stage of the project;
- Ensure members of the ERT have sufficient training and/or experience to enable an effective emergency response
- Act as Communications Officer during emergencies
- Review and, where practical, be involved in all incident investigations
- Determine the classification of the incident after the initial incident report by the first-aider
- Notify Managing Director, HSE Manager and Client following critical incidents
- Activate the Project Emergency Plan as deemed necessary

- Complete the *Q070301 Project Pre-commencement Review* and *Q070801 Jan, April, July, Oct Project Quarterly Review* within the nominated timeframe

5.2. Site Manager

- Act as initial Emergency Controller during emergencies until relieved by authorised emergency services or control is handed over to another member of the Project Team
- Maintain a working knowledge of the emergency management system, plan and processes
- Maintain familiarity with this PEP
- Participate in the scheduled review of the PEP, including the assessment contained in the Appendices
- Ensure that drills and exercises are conducted throughout the project to test the plan

5.3. Emergency Controller

- Raise the alarm for an emergency response
- Assign a person to contact/communicate with emergency services (Emergency Controller to avoid making the call personally where possible)
- Assign a CC staff member to print out the Emergency Evacuation Checklist from the Simpel Site Access Dashboard and direct that person to bring the printout to the Emergency Evacuation Point to check that people on site at the time of the incident have been accounted for
- Coordinate the emergency response appropriate to the situation, in accordance with Appendix F
- Coordinate the activities of all personnel in the emergency response team and make further directions as required by the situation
- Give the 'all clear' when authorised to do so by the emergency services, if appropriate
- Chair the operational debrief on completion of the emergency
- Assist with the completion of the incident reporting and notification, in accordance with the BMS and legislative requirements
- Arrange deputy when absent
- Schedule emergency drills for all shifts and conduct debriefing of the results
- Coordinate training requirements for the emergency response team and all other site personnel
- Consider if OzHelp and/or EAP is required to attend the scene to provide immediate support and arrange ongoing counselling options, as required and advise the PM of the steps taken

5.4. Deputy Emergency Controller

If the Emergency Controller is off site during an emergency, the Deputy Emergency Controller is to take over the full responsibilities of the Emergency Controller listed above. If the Emergency Controller is on site, the Deputy Emergency Controller is to assist.

5.5. Project HSE Advisor

- Maintain the PEP and associated processes
- Ensure that adequate emergency response information and instructions are provided at inductions etc, and displayed on noticeboards
- Conduct planned inspections to ensure emergency response equipment and facilities are complete

5.6. First-aider

- Assess first-aid requirements for the project on a quarterly basis using Appendix (F)
- Review and maintain first-aid kit contents using *S070608 First Aid Checklist*
- Administer first aid to any casualty

- Call for emergency services as appropriate to the injury
- Notify the ERT of an emergency
- Complete appropriate Incident Report Forms and where possible be involved in Incident Investigations

5.7. Deputy First-aider

If the First-aider is off site during an emergency situation the Deputy First-aider is to take over the full responsibilities of the First-aider listed above. If the First-aider is on site the Deputy First-aider is to assist.

5.8. HSE Manager, SQSD Manager, Managing Director or Project Director

A Senior Management representative is to attend the scene of all critical incidents as soon as practicable and;

- Arrange for the appropriate regulator to attend the scene
- Answer questions from regulators, emergency services, clients and the media
- Discus with the PM if counselling or EAP is required and if it has been arranged. If required, make the arrangements. This assessment is to include a consideration of if the CC project team require assistance
- Conduct a *S040504 Critical Incident Review* at an appropriate time following the incident

6. PROJECT COMMUNICATIONS

Key Incident and Emergency response information and action plans included in this PEP shall be communicated at induction and posted on site notice boards to assist project personnel in responding to an incident and/or emergency.

Site-specific and task specific emergency response requirements shall be communicated to workers via SWMS, Emergency Plans, Toolbox Talks and Risk Assessments.

The primary means of communication between CC Site Management on the project is via the use of UHF Radios, with mobile phones used as secondary communication.

In the event of an emergency the following procedure is to be used to contact CC Site Management and on site emergency personnel:

1. Advise the following of the situation:

   Site Manager - Matt Cranny – 0478 647 588

   Project Manager - Ben Eddy – 0418 777 854

2. Upon receiving the emergency call, CC Site Management shall respond by acknowledging they have the details of emergency situation. CC Site Management shall then activate the emergency alarm, if necessary, provide immediate response instructions and implement the Project Emergency Plan for the scenario presented.

The PEP shall be communicated to all relevant parties at sub-contract tender stage and QR code access to the document posted in key areas around the site.

7. TRAINING

7.1. All Personnel

All site workers must be trained on project specific emergency procedures. This training should be done as part of site induction and shall include the following:

- Alarms and other emergency communications used on the site
- Evacuation procedures including routes and assembly areas to be used
- Initial emergency response actions
- Location of first-aid kits and identification of first-aid providers
- Location of emergency response equipment
- Emergency response team members

7.2. Emergency Response Team (ERT)

Members of the Project Team shall complete the Q140205 Emergency Response Training. They may also be trained in the below listed areas as deemed appropriate by the Emergency Controller in consultation with the Project Manager & HSE Advisor:

- First-aid (Provide and/or Occupational [on sites over 100 workers regularly]);
- Mental Health First-aid (Mental Health & Crisis Support Training) Nationally Recognised Training
- Q140210 Fire Extinguisher Training
- Q140211 Spill Response Training
- Pollution of waterways response;
- Incident Investigation

7.3. Emergency Drills

An initial evacuation drill will be planned and undertaken within 3 months of project establishment and at intervals not exceeding 6 monthly using the *S070601 Emergency Response Checklist*. The EC must ensure that any drills to be undertaken are of possible scenarios that may occur on the project e.g. fire, person struck by plant etc.

8. REVIEW AND MONITORING

The PEP shall be implemented prior the commencement of works and will be reviewed and updated by the ERT as site conditions change, in the event of a critical incident, or at least every quarter using the *Q070801 Jan, April, July, Oct Project Quarterly Review*.

Inspection and Maintenance of emergency equipment shall be as per the *Q030409 Inspection & Competency Matrix*.

All emergency provisions (first aid, emergency siren, nurse-call systems, etc.) are checked during the weekly *S030402 Project Inspection Record*.

The review and debrief section of the *S070601 Emergency Response Checklist* is to be used following an emergency situation or drill to refine procedures, test effectiveness of control measures and to prompt project and company-wide process improvements.

9. RESPONSIBILITIES

Appendix A – Project Emergency Contacts

Project Details		
Site Address:	4-6 Diggings Terrace Thredbo Village	
Nearest Cross Street:	Crackenback Drive	
Nearest Hospital:	Jindabyne Hospital	
Emergency Assembly Point:	Street front, adjacent to project	
Emergency Response Team (ERT)		
Emergency Controller:	Matt Cranny	
Deputy Emergency Controller:	Michael Frino	
Project Manager:	Ben Eddy	
Site Manager:	Matt Cranny	
Site Engineer:	Michael Frino	
HSE Advisor:	Chris Ison	
First Aider:	Ben Eddy	
Deputy First Aider:	Mel Petrie	
Mental Health First Aider:	Chris Ison	
Emergency Services		
WorkSafe: 6207 3000	EPA: 132 281	Electricity (E/Energy): 9336 8141
Water (Snowy): 1300 345 345	Gas (Snowy): 1300 345 345	HazMat: 000
Poisons Information Hotline: 131 126	Sharps Hotline: 13 22 81	

Emergency Response Team (ERT)



Emergency Controller
Matt Cranny – 0478 647 588



Project Manager
Ben Eddy – 0417 477 868



HSE Advisor
Chris Ison – 0418 777 854



Dept Emergency Controller
Michael Frino – 0413 134 757



First Aider
Ben Eddy – 0417 477 868



Dept First Aider
Mel Petrie – 0411 000 000

Appendix B - First-Aider Details



First Aider
Ben Eddy – 0417 477 868



Deputy First Aider
Mel Petrie – 0411 000 000



Mental Health First Aider
Chris Ison – 0418 777 854

Appendix C - Site Layout Plan & Emergency Assembly Point

Appendix D - External Traffic Management Plan

Refer to Appendix C

Appendix E - Incident and Emergency Response Scenarios

The following scenarios have been assessed as potential serious emergencies in this phase of the project on review of the Project Risk Register (PRR).

E1. First-Aid Treatment

ACTION	WHO
1. If emergency assistance is required on site, access the site emergency siren located at describe location. • Sound the emergency siren in triple bursts to alert the site team of the emergency. • Repeated triple bursts will initiate an emergency response from the site team. With first aiders and site emergency responders attending the area as fast as possible. • First aid kits are located at describe location	Any person
2. In all other cases, notify First-aider and/or Supervisor – UHF Radio, Mobile phone or Verbal	Any person
3. Treat Injured person as required	First-aider
4. Complete the *Q040202 First Aid Register*	First-aider HSE Advisor

E2. Medical Treatment

ACTION	WHO
1. If required, once First-Aid treatment has commenced, initiate the applicable off site medical treatment e.g. ambulance or transport to hospital.	First-aider
2. Contact Emergency Controller and inform them that medical treatment is required.	First-aider
3. For a major incident requiring assistance from emergency services, initiate a response from the ERT to prepare for the arrival of the paramedics. Post workers at all site gates to direct the Ambulance directly to the injured person. For a minor MTI arrange an escort for the injured person to medical centre to ensure they receive appropriate treatment.	nergency Controller
4. Report incident to Project Manager and HSE Manager	First-aider
5. Obtain Medical Certificate and/or Return to Work Plan and complete CC BMS S040501 Incident Investigation Report	First-aider / eman / HSE Advisor
6. Monitor injury status and report to HSE Manager if incident turns into a Lost Time Injury (LTI – one shift or more lost)	HSE Advisor

E3. Emergency Evacuation

ACTION	WHO
1. If emergency services are required call '000'. Stay on the phone to provide all relevant information.	CC Staff
2. Collect portable First Aid kit from the nearest location shed and deliver to scene of incident (AS REQUIRED).	First Aider
3. Via 2-way or phone, delegate a responsible Construction Control site workers to evacuate people from the immediate danger (if present).	Emergency Controller
4. Initiate the evacuation process using the Simpel personnel management system.	CC Staff
5. Emergency controller to instruct persons to open all Emergency Exits.	Emergency Controller
6. Contact all on-site CC site personnel (where required via radio and phone): Delegate specific responsibilities to CC staff (where required contractors) to commence systematic approach to clearing all areas of site from top to bottom. (Radio contact to be maintained and secure areas to be marked off).	Emergency Controller and Deputy Emergency Controller
7. Depending on the nature of the evacuation, arrange for the notification of the occupants of surrounding buildings. Send non crucial personnel to the surrounding buildings to advise the relevant personnel.	Emergency Controller and Deputy Emergency Controller
8. All site personnel to proceed to site emergency assembly point.	All workers as advised at induction
9. Evacuation Point Coordinator to be assigned. Designated person will coordinate all functions at the Evacuation Point.	Emergency Controller
10. Designated assembly point coordinator to print Simpel emergency evacuation checklist and commence registration of evacuees at assembly point	Assembly Point Coordinator
11. Provide First Aid Assistance at the scene of incident (if safe to do so)	First Aider
12. Contact Project Manager	Emergency Controller
13. Commence systematic screening of all areas on floor and close doors. Ensure areas are left in a safe condition.	Designated personnel
14. Contact Construction Control Senior Management (Project Director and HSE Manager) and advise of situation.	Project Manager

ACTION	WHO
15. Remain at Gate Entrance to direct vehicles/people as necessary. (Maintain constant contact with the Emergency Controller).	Designated person
16. Have Evacuated workers wait in subcontractor groups within the designated assembly point.	Emergency Controller
17. Complete Simpel evacuation checklist.	Assembly Point Coordinator
18. Report all workers not accounted for to the Emergency Controller.	Assembly Point Coordinator
19. Advise emergency services of site status and any people not accounted for.	Emergency Controller
20. Provide possible First Aid Assistance at Evacuation Assembly Point where required.	Available CC First Aider
21. Authorisation for site safe to return to work.	Project Manager
22. Notify Regulators as soon as it is safe to do so. Isolate any relevant areas pending investigation.	Project Manger

E4. Gas Leak

ACTION	WHO
1. Determine if any worker/s are injured and make area safe	Any person
2. Shut off gas supply where possible	ERT / Foreman
3. Apply first-aid if necessary and safe to do so	First-aider
4. Isolate area and contact PM and HSE Manager	ERT / Foreman
5. Contact Emergency Services and EC / Project Manager to contact and coordinate incident	ERT / Foreman
6. Preserve site conditions until authorisation received from Regulator to re-enter site	EC / PM
7. Obtain particulars of those involved and complete S040501 Incident Investigation Report	ERT

E5. Fire

ACTION	WHO
1. Alert workers in the vicinity of the fire	Any person
2. Alert Emergency Controller and first-aid	Assistant
3. Apply first-aid if necessary and safe to do so	First-Aider
4. Extinguish fire using suitable means, if safe to do so	Any person
5. Notify ERT and Foreman of incident requiring emergency response	Any person
6. If fire cannot be contained, contact Emergency Services	ERT / Foreman

E6. Trench / Excavation Collapse

ACTION	WHO
1. Notify emergency CC personnel of situation.	Any person
2. Check excavation for signs of workers and severity of collapse	Any person / ERT
3. If worker/s is trapped: ○ Notify emergency services for assistance; ○ Assess the excavation for potential of further collapse; if so: ○ Shoring may be required to further stabilise the excavation; ○ Battering the excavation to eliminate further collapse ○ Bracing or supporting the excavation with the bucket of an excavator may be considered to assist with the stabilisation of the immediate recovery area. ○ Locate the trapped worker, avoid digging with machine until the workers position is positively identified and it is safe to use. ○ If safe to do so commence soil removal taking into consideration the position of trapped worker; clearing soil from around the worker by hand; ○ Remove soil from around the workers face and ensure air way is clear. ○ Commence first aid assessment and provide treatment as required. ○ Stay calm and provide water, protection from the weather (sun, wind etc) ○ A worker should not be removed if there is potential for further injury or life-threatening situation. Wait for Emergency Services to remove worker. ○ A worker should not be removed if there is potential for further injury or life threatening situation. Wait for Emergency Services to remove worker. ○ Notify Managing Director and HSE Manager.	ERT Project Manager
4. If worker/s is not trapped: i) Isolate the incident zone and notify nearby personnel within the affected area and notify Site Foreman / Manager	ERT

E7. HV/LV Electrical Service Strike

ACTION	WHO
1. Establish a minimum 10m exclusion zone around incident	Any person
2. Operator to remain in cabin until safety assessment of the cable to be determine whether the line is live or not	Plant Operator
3. If electrical cable is live and able to be isolated: i) Locate electrical source and isolate electrical circuit ii) Contact Emergency Services for assistance iii) Undertake first-aid treatment as required	mergency Controller (EC)
4. If electrical cable is live and unable to be isolated: i) Contact Emergency Services for assistance ii) Does the operator need to leave the cabin for a safety reason i.e., fire or life threatening reason? If No - Operator to remain in cabin If Yes - Do not touch the equipment and the ground at the same time. Operator is to shuffle away from the item of plant with feet together until at least 10m away iii) Preserve site conditions until authorisation received from Regulator to re-enter area	EC
5. Notify Managing Director and HSE Manager.	PM

E8. Environmental Incident

Situation	Response	WHO
Fire Water	1. In the event of a fire, after contacting 000 and initiating this PEP: 2. Remove all combustible fluids or materials from as close as it is safe to do so 3. Prepare area for mitigation of environmental damage resulting from flame retardant runoff. In all areas where flame retardants or fire water runoff can access storm water or natural waterways, use spill controls from the spill kit to protect the areas from contaminated runoff. 4. Follow the direction of Emergency Services regarding runoff during the emergency, once the emergency is controlled any trapped water will be pumped directly by an external contractor or pumped by CC into storage to be collected at a later date by a contractor 5. Verify a receipt of delivery of contaminated material from subcontractor to waste disposal depot to ensure that contaminated materials are disposed of as per law	ERT / EC
Sediment control breach	1. If sediment control measures on/or surrounding site are breached the site shall:	ERT / Foreman

Situation	Response	WHO
	2. Contain the water (as far as practical) using suitable means until appropriate sediment control is in place. Refer to CC BMS Procedure 3.05 Turbidity testing 3. EPA shall be contacted where water cannot be contained.	
Contaminated soil spill / leak	1. Contaminated soil shall be: 2. Isolated / contained and removed by an approved external contractor; 3. EPA / Client / WorkSafe shall be contacted where imminent risk to environmental impact.	ERT / Foreman
Serious impact on flora / fauna	1. Where protected Flora / Fauna are impacted CC shall contact EPA and/or client on appropriate action forward as per legislation.	PM
Hazardous Substance incident	1. If a Hazardous Substance spill occurs: 2. Determine if any worker/s are injured and if safe, apply First Aid; 3. Isolate the area and contact PM and HSE Manager. Preserve site conditions until authorisation received from regulatory authorises to resume work. 4. Manage spill / release as per product SDS 5. If situation requires Emergency Services, EC / Project Manager to contact and coordinate incident; 6. Independent contractor to pump spilled chemicals from bunded storage area; 7. Use the site spill kit to control secondary spills associated with pumping, ensuring that no contaminants are allowed to enter storm water drains or natural waterways; 8. Verify a receipt of delivery of contaminated material from subcontractor to waste disposal depot to ensure that contaminated materials are disposed of as per legislative requirements; 9. If the controls fail and contamination enters the eco-structure, contact the EPA on 13 22 81 and advise of the incident and the extent.	EC / Foreman
Concrete pump blowout/spill	1. If a concrete spill occurs the site shall: 2. Have concrete washout areas that have appropriate matting/bunding to contain spills. 3. Use spill kit to ensure concrete is not allowed to access drains or waterways as part of the clean up 4. Runoff water shall be contained and treated as contaminated water 5. Concrete pumping contractor shall have appropriate controls for pump out area breaching/rupturing and/or area leaking into drain ways.	Foreman

E9. Plant Collision/Roll Over

ACTION	WHO
1. Determine if any worker/s are injured and make area safe	Any person
2. Apply first-aid if necessary and safe to do so	First-aider
3. Isolate area and contact PM and HSE Manager. Preserve site conditions until authorisation received from Regulator to move plant / equipment.	ERT / Foreman
4. Arrange for any structures to be recertified where applicable (formwork, scaffold, adjacent structures)	ERT / Foreman
5. Arrange for the vehicle or plant obstruction to be moved	ERT / Foreman
6. If situation requires Emergency Services, EC/Project Manager to contact and coordinate incident	EC / PM
7. Obtain particulars of those involved and complete S040501 Incident Investigation Report	ERT

E10. Forecast storm warning

ACTION	WHO
1. Assess the severity and nature of the storm using data from BOM	Any person
2. Prepare for storm by: • Securing loose or vulnerable materials • Closing scaffold • Preparing for minor flooding/water inflow • Appropriate actions based upon the type of storm	ERT / Site Manager
3. Assess site sediment control implemented, remove material from zones prone to flooding and secure site.	ERT
4. Initiate rescue using approved Retrieval Plan and/or WMS and available plant / equipment directed by EC	ERT

E11. Structural collapse

ACTION	WHO
1. Determine if any worker/s are injured and apply first-aid if safe to do so.	First Aider
2. Isolate area and report to CC Site Management / Emergency Response Team	Any person
3. Make safe with minimum 10m exclusion zone. Where required commence Evacuation Procedures.	EC, Site Manager, HSE Advisor
4. Contact Emergency Services, WorkSafe, Project Director, HSE Manager and commence incident report.	EC
5. Call structural engineer to assess situation and provide advice on safe remediation.	EC/Site Manager
6. Do not proceed until it is deemed safe.	ERT
7. Initiate rescue using approved Retrieval Plan and/or WMS and available plant / equipment directed by EC.	ERT

Appendix F – Emergency Requirements Risk Assessment

Size and Location of the Workplace	
Number of floors?	2
Access between floors?	Stair
Nearest hospital?	Jindabyne
Nearest medical or occupational health service?	Thredbo
Maximum time to medical service?	8 minutes
Nearest AED (Defibrillator)?	Site Office
Number and Composition of Workforce and Others at the Workplace	
Number of workers (peak)	45
Numbers of other persons (visitors etc.)	5
After hours work expected	No
Additional controls for remote or isolated workers required	No
Injuries Illnesses and Incidents	
Construction Control collects all project Injury and Incident stats on a monthly basis, compares this to project expectations, industry standards and company targets and communicates these company wide monthly via an email from the MD.	
Industry trends?	Industry trends point to manual handling injuries, slips, trips and falls, minor lacerations and foreign particle eye injuries being the most common injuries in construction. In recent years there have been instances of minor injuries, serious injuries and fatalities in the ACT construction industry. Based on this information, it is essential that a person capable of providing first aid to minor and medium impact injuries is always available on site when there is work taking place. These incidents have not been related to poorly planned first aid controls.
Results of Previous Incident and Evacuation Drills	
Time to evacuate?	NA
Communication effective / siren audible across whole site	NA
Were drills effective	NA
Other	Nil

Nature of the work being carried out and the nature of the hazards at the workplace		
Hazards	How the hazard could cause harm	Likelihood of occurrence and degree of harm
Plant	Impact, crush/shear, fume inhalation, burn, explosion, fall from height	12 High
Work at height	Persons fall from height, persons struck by falling material or persons	12 High
Hazardous substances / Dangerous goods	Fume inhalation, chemical skin or eye injury, accumulative toxic build-up, Poisoning	9M
Electricity	Electrical shock injury	15 Severe
Manual handling	Muscular / skeletal injury	12 High
Work environment	Slips & trips, foreign body, laceration, sunburn,	12 High

First Aid requirements	
Number of first aiders needed to ensure First Aider is always available on site?	2
Training and competencies for first aider/deputy?	Resuscitation (Annual refresher) Provide First Aid (3 year expiry) 1 x Occupational First Aid (on sites with over 100 workers expected.)
Mental Health first aider requirements?	1 x trained Construction Control staff member, on a project with over 50 workers on site on a regular basis. The CC staff member is to have 100% of their time assigned to the project.
Number and location of conventional first-aid kits	Record
Defibrillator – Next Service Due:	Record
Respiratory Relief (Ventolin Inhaler) Expiry:	Record
Epinephrin pen (Epi Pen) Expiry:	Record
Tourniquet	Record
Medical Oxygen	Required / Not Required
Other	
Contents of first aid kits as per S070608?	Yes
Emergency equipment reviewed as per S070609	Yes
Location of Emergency Assembly Point	
Location of Emergency Assembly Point	

Required Fire Response Equipment	
Locations of Fire Extinguishers	Located at all TPBs, site office, kitchens and on all emergency stairs with access onto a floor of the project
Number of Fire Extinguishers	TBC
Site personnel trained in use	Site Team
Other	N/A
Required Spill Response Equipment	
Locations of Spill Kit	TBC
Type of spill kit	TBC
Other	N/A
Required Site Evacuation Equipment	
Location emergency equipment	TBC
Required equipment	Pneumatic airhorns Portable loudspeakers Nurse Call on sites with over 100 workers at peak Emergency Evacuation signage Stretcher stairs Secondary evacuation point (including cranable Ambulance box)

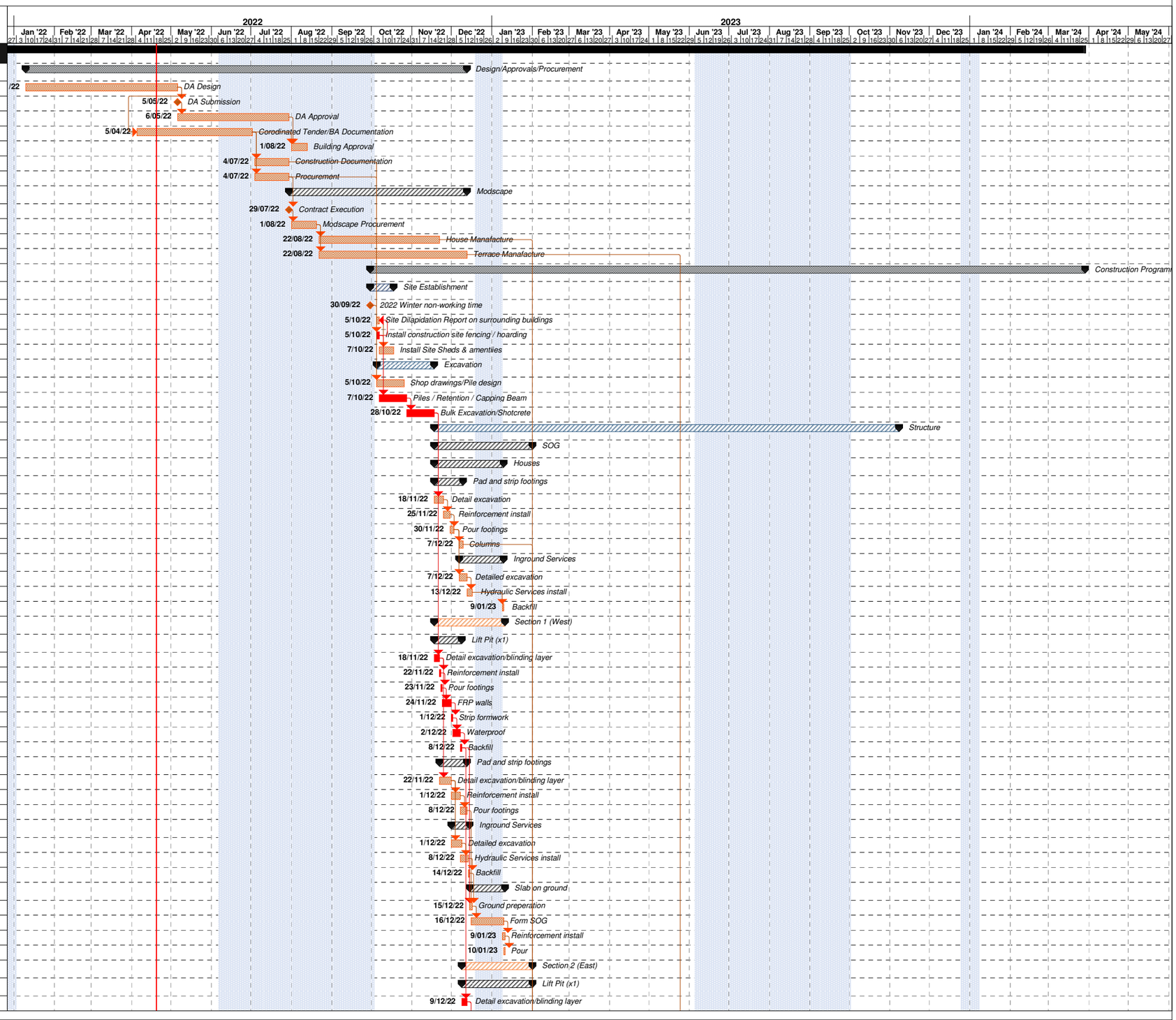
Other	N/A
Required Incident Notification Equipment	
Locations of incident alarms	TBC
Type of Alarm	TBC
Site Emergency Contact Signage	Displayed around site in appropriate areas
Other	N/A
Required Trench Collapse Equipment	
Locations of rescue equipment	CC Shipping Container
Required equipment	Shovels and hand digging tools Isolation controls – bollards and danger tape
Required Low Voltage Rescue Kit	
Locations of Low Voltage Rescue Kit	Electrical contractor to provide as per PRR.

ATTACHMENT G – INDICATIVE CONSTRUCTION PROGRAM

THREDBO LOT 768

ConstructionControl

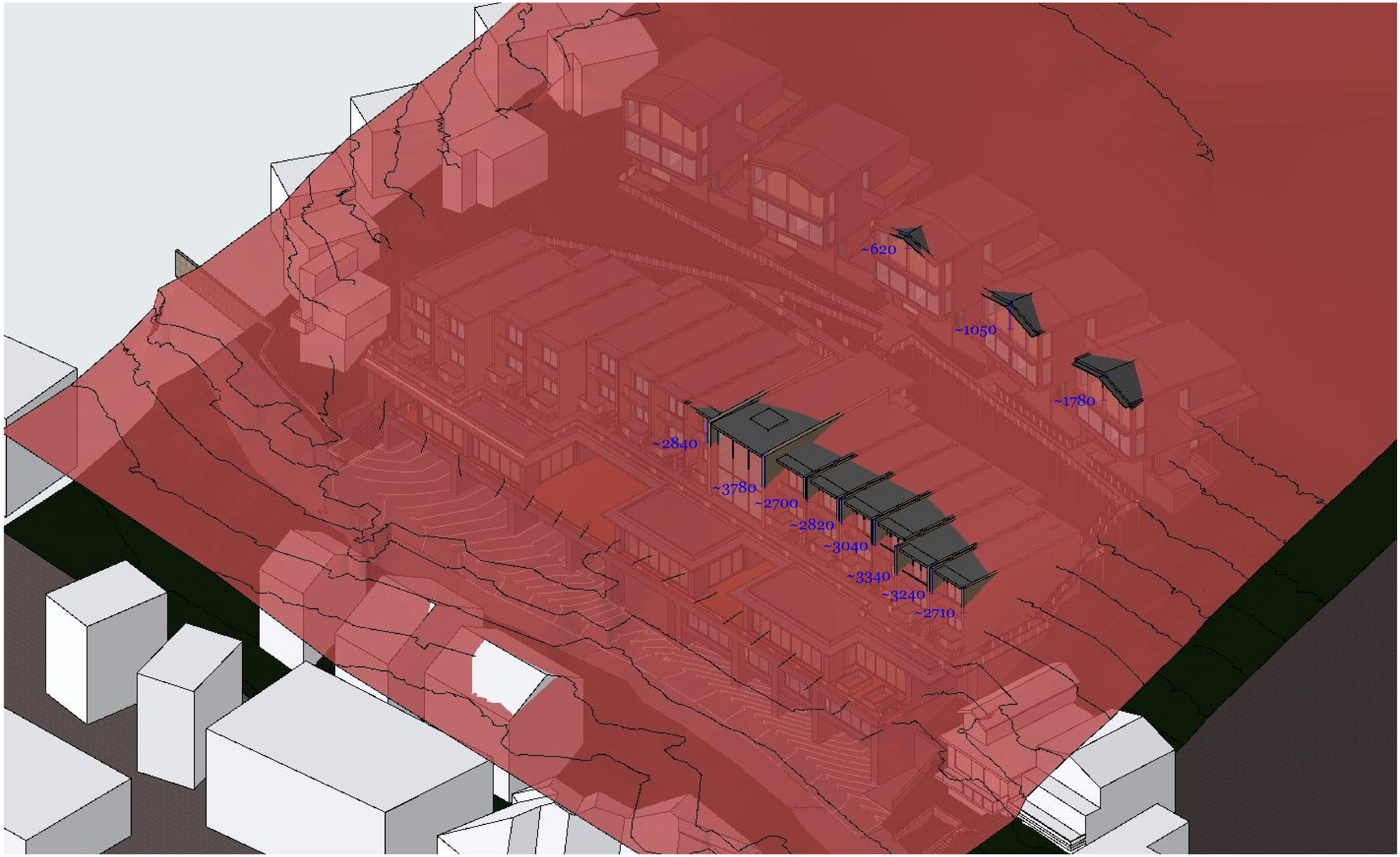
ID	Task Name	Dur	Start	Finish
0	**THREDBO**	**457 d**	**Mon 2/08/21**	**Thu 28/03/24**
1	**Design/Approvals/Procurement**	**241 d**	**Mon 10/01/22**	**Mon 12/12/22**
2	DA Design	16 wks	Mon 10/01/22	Thu 5/05/22
3	DA Submission	0 d	Thu 5/05/22	Thu 5/05/22
4	DA Approval	12 wks	Fri 6/05/22	Fri 29/07/22
5	Corodinated Tender/BA Documentation	3 mons	Tue 5/04/22	Fri 1/07/22
6	Building Approval	2 wks	Mon 1/08/22	Fri 12/08/22
7	Construction Documentation	4 wks	Mon 4/07/22	Fri 29/07/22
8	Procurement	4 wks	Mon 4/07/22	Fri 29/07/22
9	**Modscape**	**95 d**	**Fri 29/07/22**	**Mon 12/12/22**
10	Contract Execution	0 d	Fri 29/07/22	Fri 29/07/22
11	Modscape Procurement	3 wks	Mon 1/08/22	Fri 19/08/22
12	House Manafacture	13 wks	Mon 22/08/22	Mon 21/11/22
13	Terrace Manafacture	16 wks	Mon 22/08/22	Mon 12/12/22
14	**Construction Programme**	**262 d**	**Fri 30/09/22**	**Thu 28/03/24**
15	**Site Establishment**	**9 d**	**Fri 30/09/22**	**Mon 17/10/22**
16	2022 Winter non-working time	0 d	Fri 30/09/22	Fri 30/09/22
17	Site Dilapidation Report on surrounding buildings	2 d	Wed 5/10/22	Thu 6/10/22
18	Install construction site fencing / hoarding	2 d	Wed 5/10/22	Thu 6/10/22
19	Install Site Sheds & amentiies	7 d	Fri 7/10/22	Mon 17/10/22
20	**Excavation**	**32 d**	**Wed 5/10/22**	**Thu 17/11/22**
21	Shop drawings/Pile design	3 wks	Wed 5/10/22	Tue 25/10/22
22	Piles / Retention / Capping Beam	3 wks	Fri 7/10/22	Thu 27/10/22
23	Bulk Excavation/Shotcrete	3 wks	Fri 28/10/22	Thu 17/11/22
24	**Structure**	**141 d**	**Fri 18/11/22**	**Tue 7/11/23**
25	**SOG**	**34 d**	**Fri 18/11/22**	**Tue 31/01/23**
26	**Houses**	**20 d**	**Fri 18/11/22**	**Mon 9/01/23**
27	**Pad and strip footings**	**14 d**	**Fri 18/11/22**	**Fri 9/12/22**
28	Detail excavation	5 d	Fri 18/11/22	Thu 24/11/22
29	Reinforcement install	3 d	Fri 25/11/22	Tue 29/11/22
30	Pour footings	3 d	Wed 30/11/22	Fri 2/12/22
31	Columns	3 d	Wed 7/12/22	Fri 9/12/22
32	**Inground Services**	**9 d**	**Wed 7/12/22**	**Mon 9/01/23**
33	Detailed excavation	4 d	Wed 7/12/22	Mon 12/12/22
34	Hydraulic Services install	4 d	Tue 13/12/22	Fri 16/12/22
35	Backfill	1 d	Mon 9/01/23	Mon 9/01/23
36	**Section 1 (West)**	**21 d**	**Fri 18/11/22**	**Tue 10/01/23**
37	**Lift Pit (x1)**	**13 d**	**Fri 18/11/22**	**Thu 8/12/22**
38	Detail excavation/blinding layer	2 d	Fri 18/11/22	Mon 21/11/22
39	Reinforcement install	1 d	Tue 22/11/22	Tue 22/11/22
40	Pour footings	1 d	Wed 23/11/22	Wed 23/11/22
41	FRP walls	5 d	Thu 24/11/22	Wed 30/11/22
42	Strip formwork	1 d	Thu 1/12/22	Thu 1/12/22
43	Waterproof	2 d	Fri 2/12/22	Wed 7/12/22
44	Backfill	1 d	Thu 8/12/22	Thu 8/12/22
45	**Pad and strip footings**	**13 d**	**Tue 22/11/22**	**Mon 12/12/22**
46	Detail excavation/blinding layer	7 d	Tue 22/11/22	Wed 30/11/22
47	Reinforcement install	3 d	Thu 1/12/22	Wed 7/12/22
48	Pour footings	3 d	Thu 8/12/22	Mon 12/12/22
49	**Inground Services**	**8 d**	**Thu 1/12/22**	**Wed 14/12/22**
50	Detailed excavation	4 d	Thu 1/12/22	Thu 8/12/22
51	Hydraulic Services install	4 d	Thu 8/12/22	Tue 13/12/22
52	Backfill	1 d	Wed 14/12/22	Wed 14/12/22
53	**Slab on ground**	**4 d**	**Thu 15/12/22**	**Tue 10/01/23**
54	Ground preperation	2 d	Thu 15/12/22	Fri 16/12/22
55	Form SOG	2 d	Fri 16/12/22	Mon 9/01/23
56	Reinforcement install	2 d	Mon 9/01/23	Tue 10/01/23
57	Pour	1 d	Tue 10/01/23	Tue 10/01/23
58	**Section 2 (East)**	**21 d**	**Fri 9/12/22**	**Tue 31/01/23**
59	**Lift Pit (x1)**	**21 d**	**Fri 9/12/22**	**Tue 31/01/23**
60	Detail excavation/blinding layer	2 d	Fri 9/12/22	Mon 12/12/22



Ben Eddy

Milestone · Complete Milestone · Project Summary · Project Summary progress · Summary · Summary T4 · H1 Project Summary Progress · H2 Summary progress · Critical Task · Non-critical · Progress · Rolled up · Rolled up progress

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B	14/05/2022	NT	MR/SO	For DA Coordination

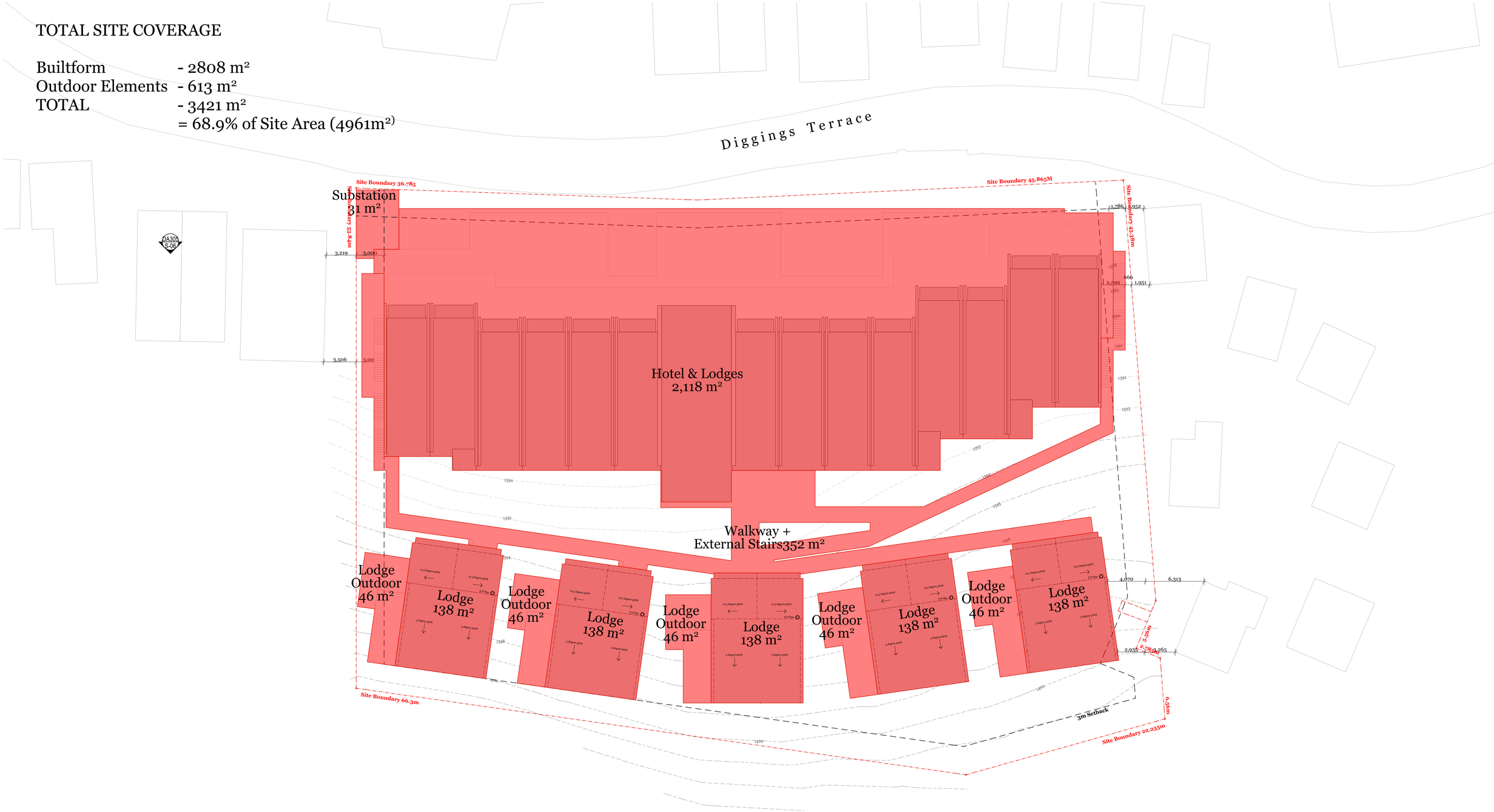
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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Height Plane Diagram
		Scale	1:62.97 @ A1
		Date	14/05/2022
Client	Le Hunte Properties	Drawing Number	**DA402**
		Revision	**B**

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TOTAL SITE COVERAGE

Builtform	- 2808 m²
Outdoor Elements	- 613 m²
TOTAL	- 3421 m²
	= 68.9% of Site Area (4961m²)



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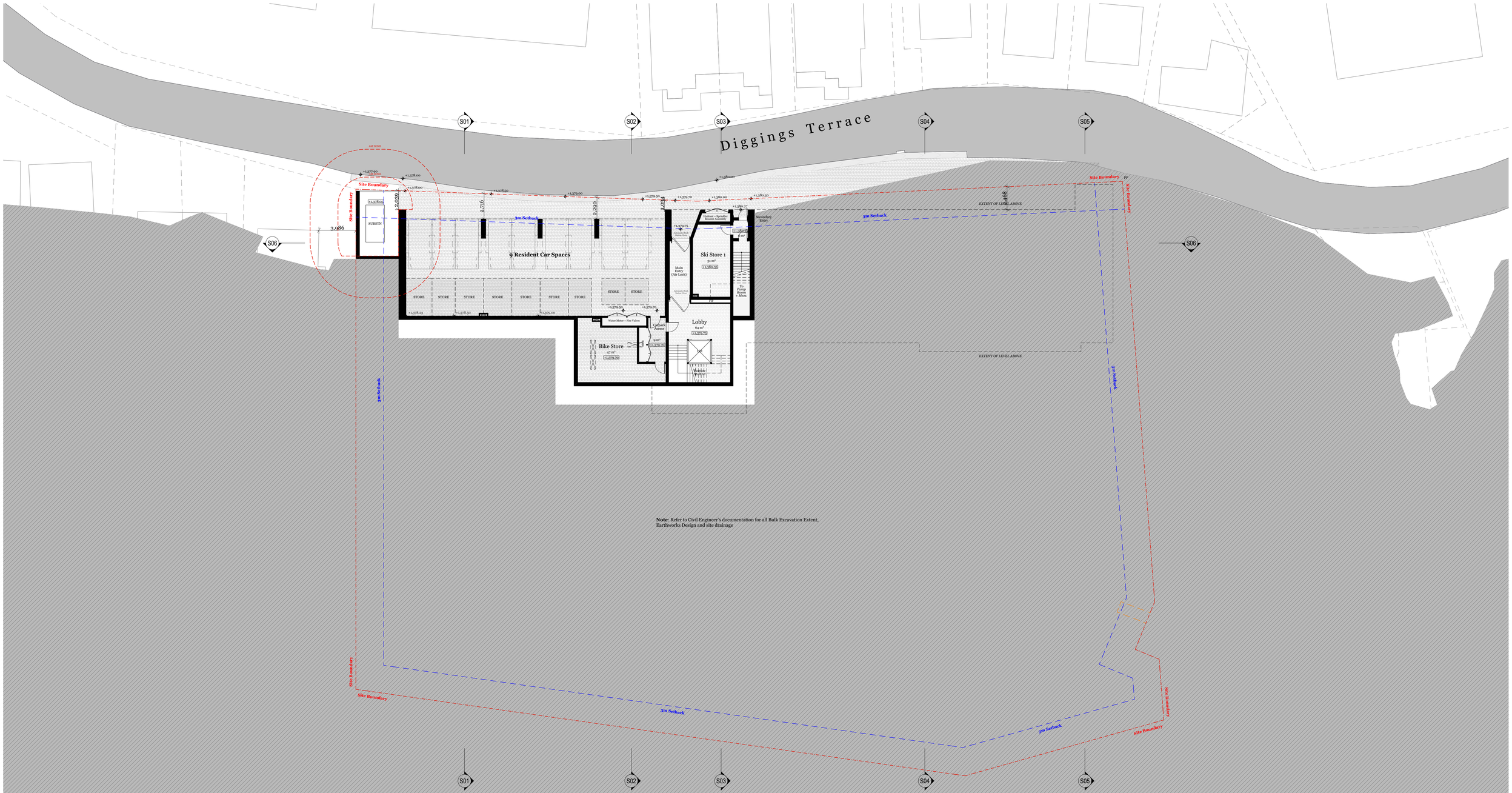
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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Site Coverage
		Scale	1:200 @ A1
		Date	14/05/2022
Client	Le Hunte Properties	Drawing Number	DA403
		Revision	B



Note: Refer to Civil Engineer's documentation for all Bulk Excavation Extent, Earthworks Design and site drainage

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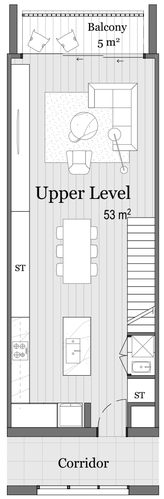
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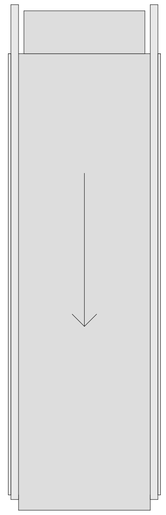
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Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Ground Floor Plan
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA200
		Revision	A



Lower Floor
(Level 2)



Upper Floor
(Level 3)



Roof
(Level 4)

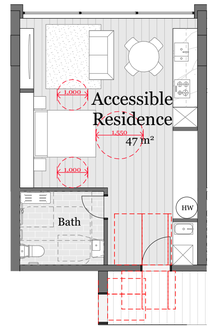
Typical Terrace

Typical Terrace Areas

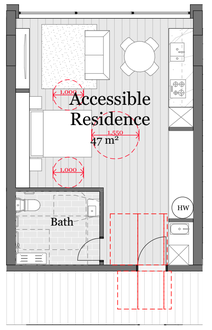
	Internal m²	External m²
Lower Level	65	10
Upper Level	53	5
TOTAL	**118**	**15**

Lodge Areas

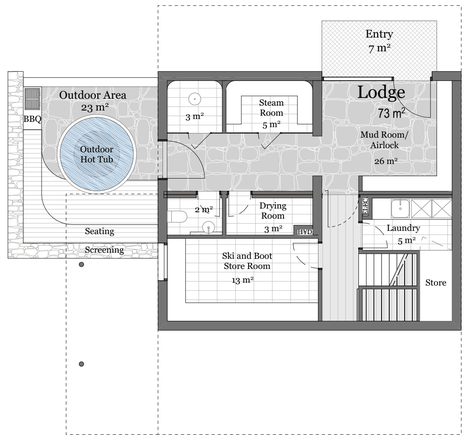
	Internal m²	External m²
Lower Level	73	30
Mid Level	112	-
Upper Level	112	24
TOTAL	**297**	**54**



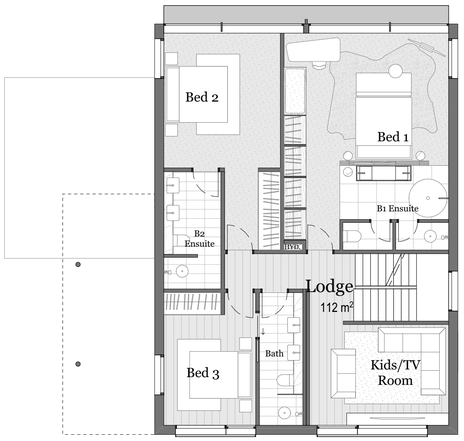
Accessible Residence A



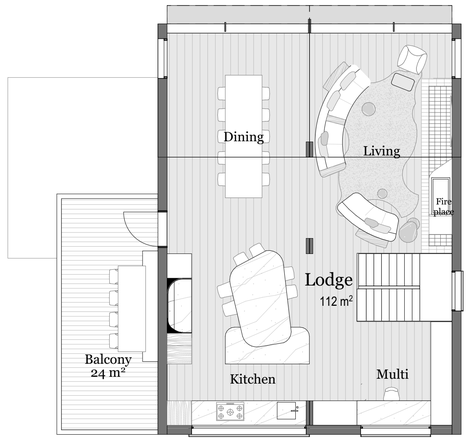
Accessible Residence B



Entry Floor
(Level 3)



Bedroom Floor
(Level 4)



Living Floor
(Level 5)



Roof
(Level 6)

Lodge

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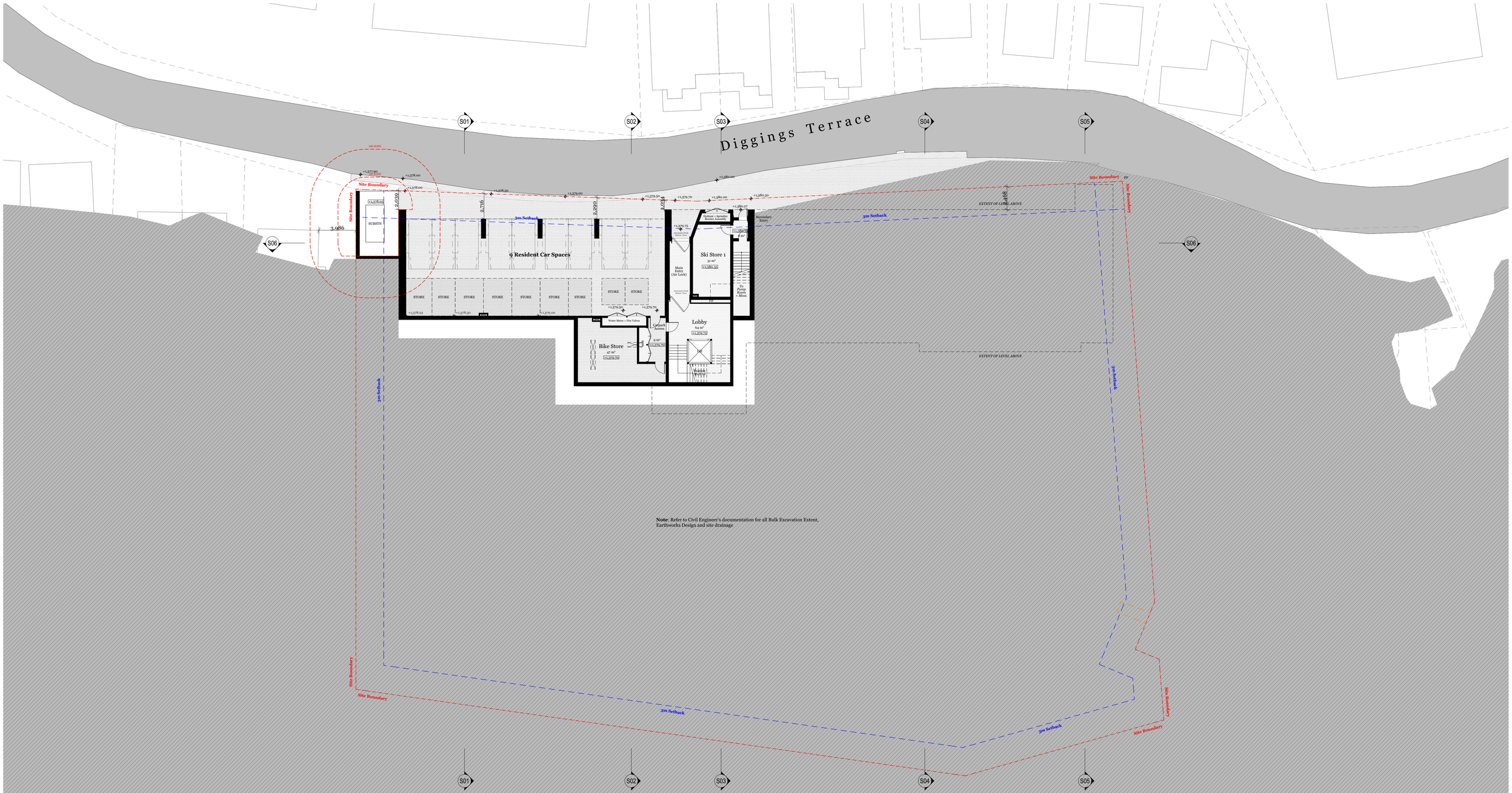
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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Unit Plans
		Scale	1:100 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	**DA208**
		Revision	**A**



Note: Refer to Civil Engineer's documentation for all Bulk Excavation Extent, Earthworks Design and site drainage

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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Ground Floor Plan
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA200
		Revision	A



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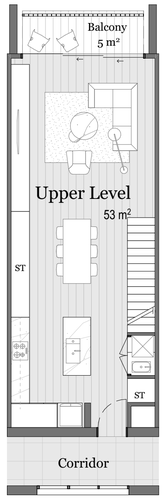
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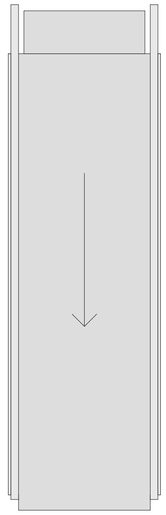
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		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA207
		Revision	A



Lower Floor
(Level 2)



Upper Floor
(Level 3)



Roof
(Level 4)

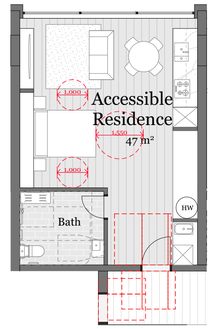
Typical Terrace

Typical Terrace Areas

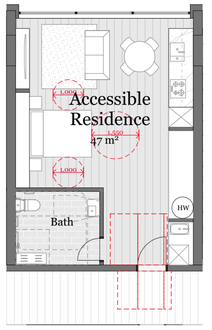
	Internal m²	External m²
Lower Level	65	10
Upper Level	53	5
TOTAL	**118**	**15**

Lodge Areas

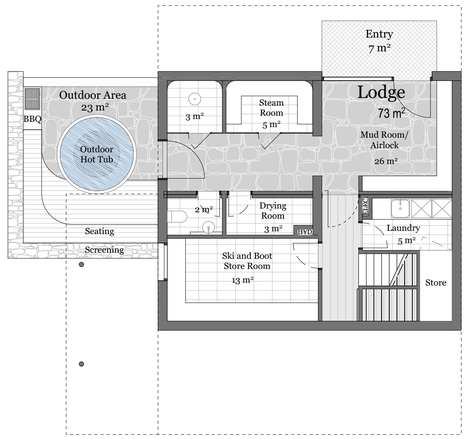
	Internal m²	External m²
Lower Level	73	30
Mid Level	112	-
Upper Level	112	24
TOTAL	**297**	**54**



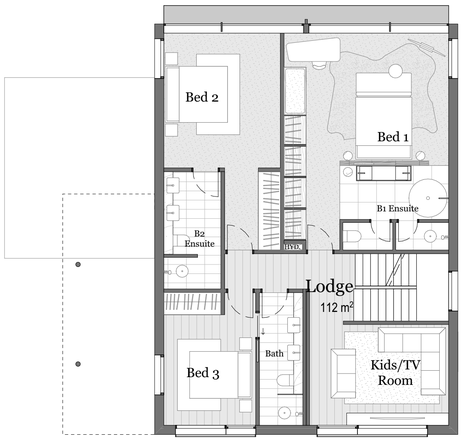
Accessible Residence A



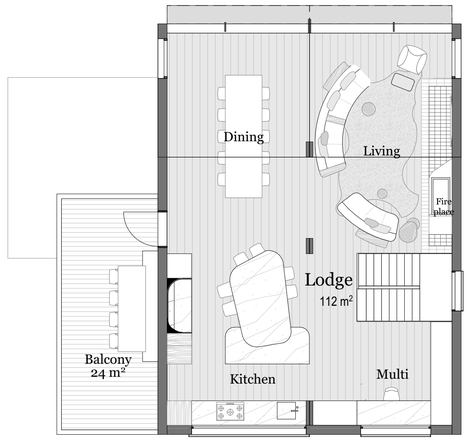
Accessible Residence B



Entry Floor
(Level 3)



Bedroom Floor
(Level 4)



Living Floor
(Level 5)



Roof
(Level 6)

Lodge

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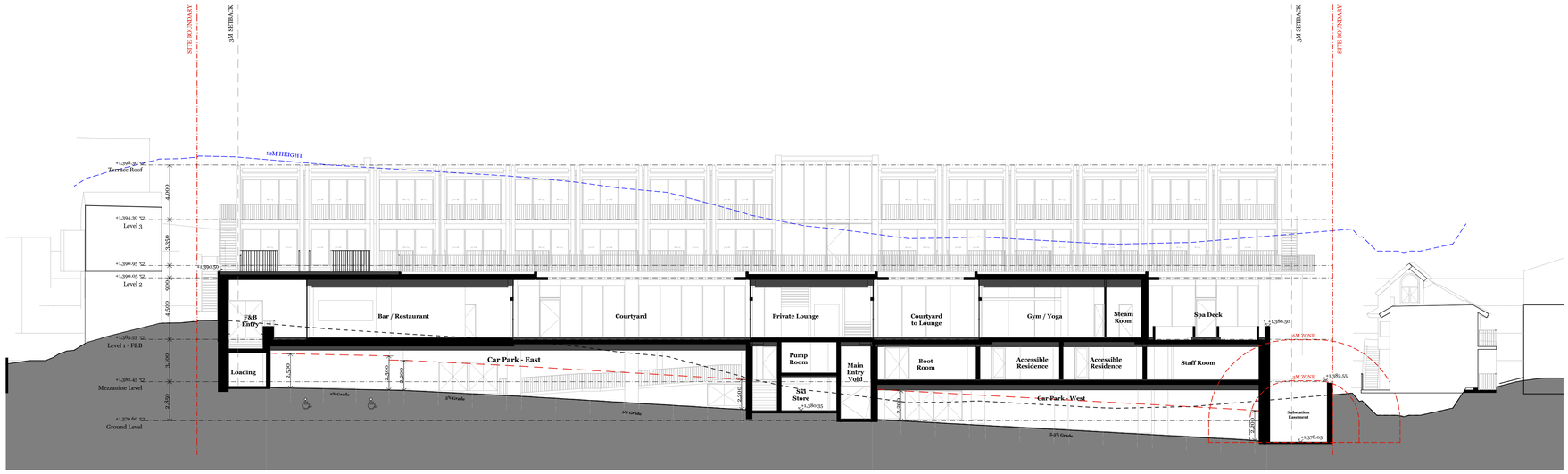
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Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Unit Plans
		Scale	1:100 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	**DA208**
		Revision	**A**





SECTION 5





SECTION 6

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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Sections - Sheet 3
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA305
		Revision	A



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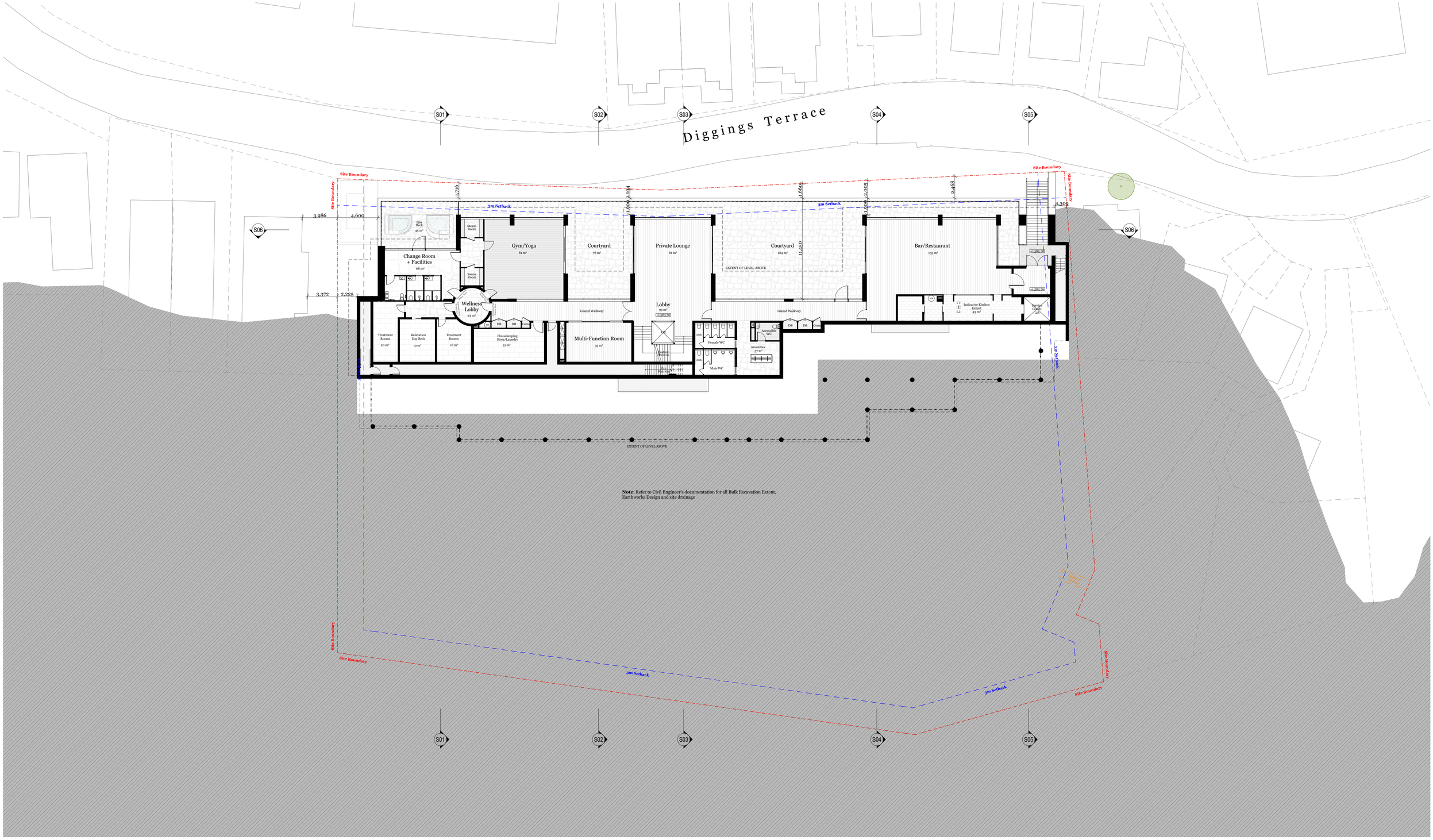
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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Level 2
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA203
		Revision	A



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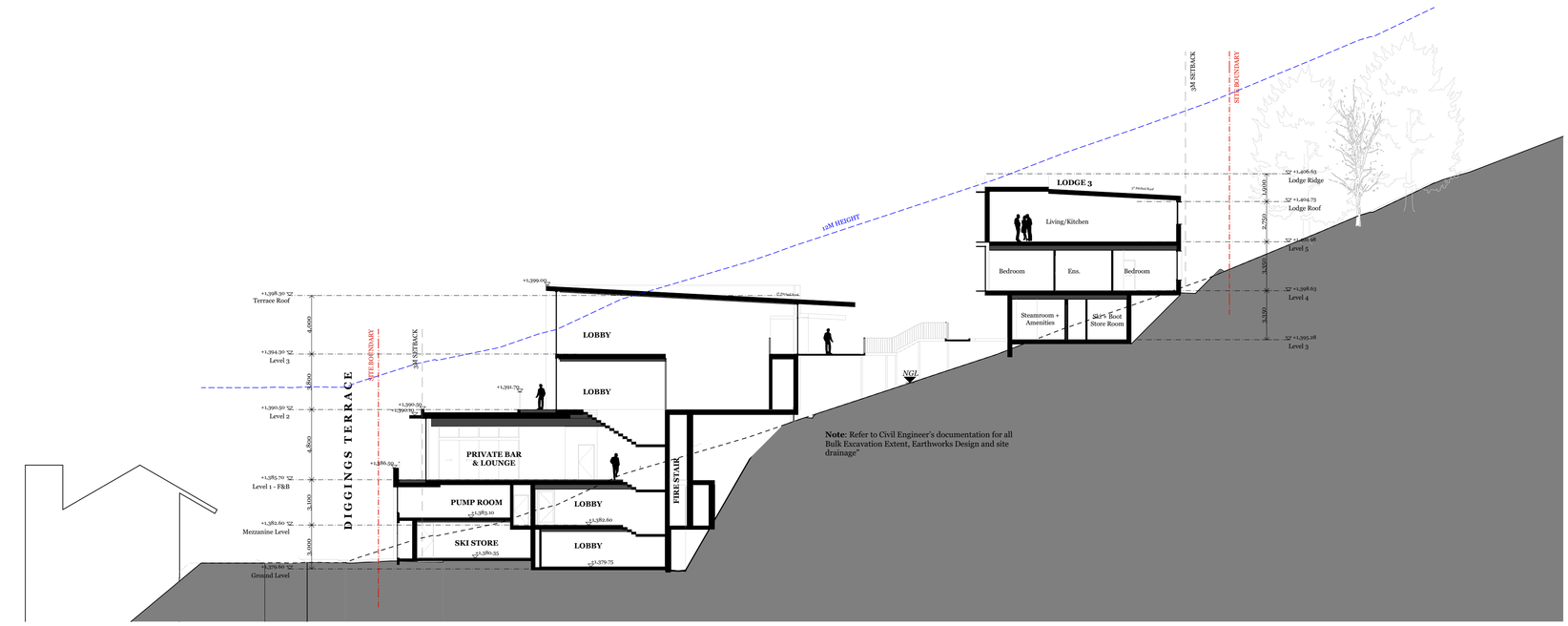
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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Level 1
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA202
		Revision	A

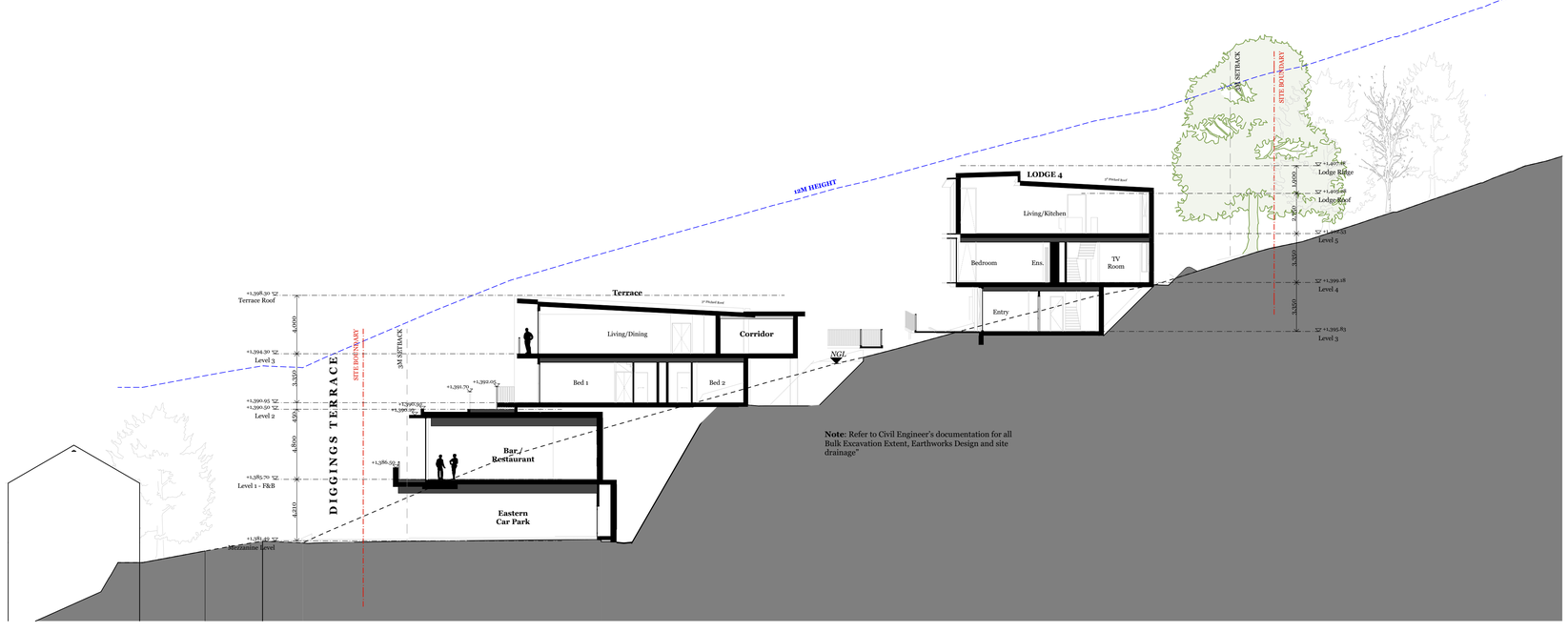

Diggings Terrace
S01
S02
S03
S04
S05
S06
Site Boundary
3m Setback
Extent of F&B Terrace Below (Level 1)
Extent of Roof Over F&B Below (Level 2)
Extent of Walkway Below (Level 2)
11.916
11.484
13.252
10.305
7.368
Lobby
+1.394.350
Void
Electrical
Terrace Waste
Lodge Waste
Total Apt.: 15 x 120L Bins
E-Pit
Upper Level
53 m²
Balcony 5 m²
Lodge
73 m²
Entry 7 m²
Outdoor Area 23 m²
Outdoor Hot Tub
Shower Room 3 m²
Toilet 1 m²
Dining Room 17 m²
Laundry 3 m²
Ski and Boot Store Room 13 m²
Shelf Room/ Airlock 16 m²
Seating
Barbeque
Kitchen
Note: Refer to Civil Engineer's documentation for all Bulk Excavation Extent, Earthworks Design and site drainage.
Refer to Landscape Architect's documentation for landscape design
3.348
3.775
4.964
1.308
992
4.650
5.193
4.965
5.337
5.042
3.393
3.168
3.001
2.604
3.382
2.509
2.958
1:20
1:14
1:16.33
+1.394.750
+1.395.150
+1.395.550
+1.395.750
+1.395.350
+1.395.950
+1.395.150
+1.395.550
+1.395.750
+1.395.350
+1.395.950
+1.395.150
+1.395.550
+1.395.750
+1.395.350
+1.395.950
+1.395.150
+1.395.550
+1.395.750
+1.394.350
+1.394.350
+1.394.350





SECTION 3





SECTION 4

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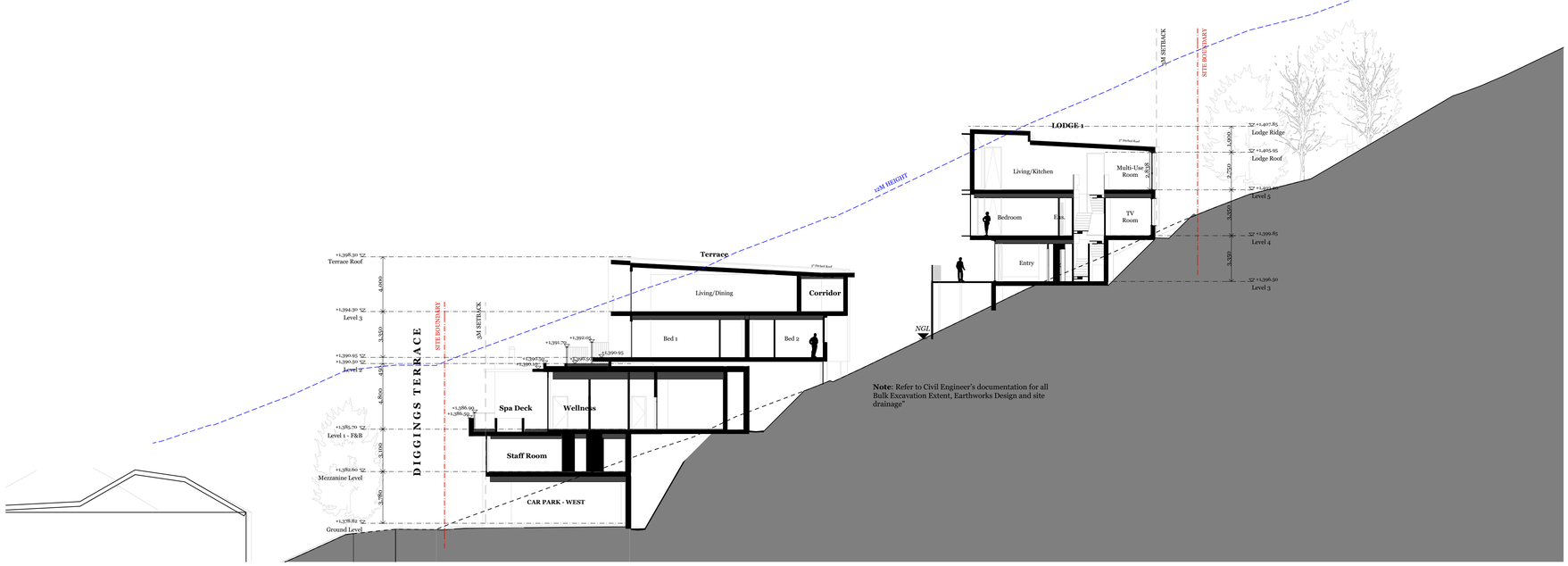
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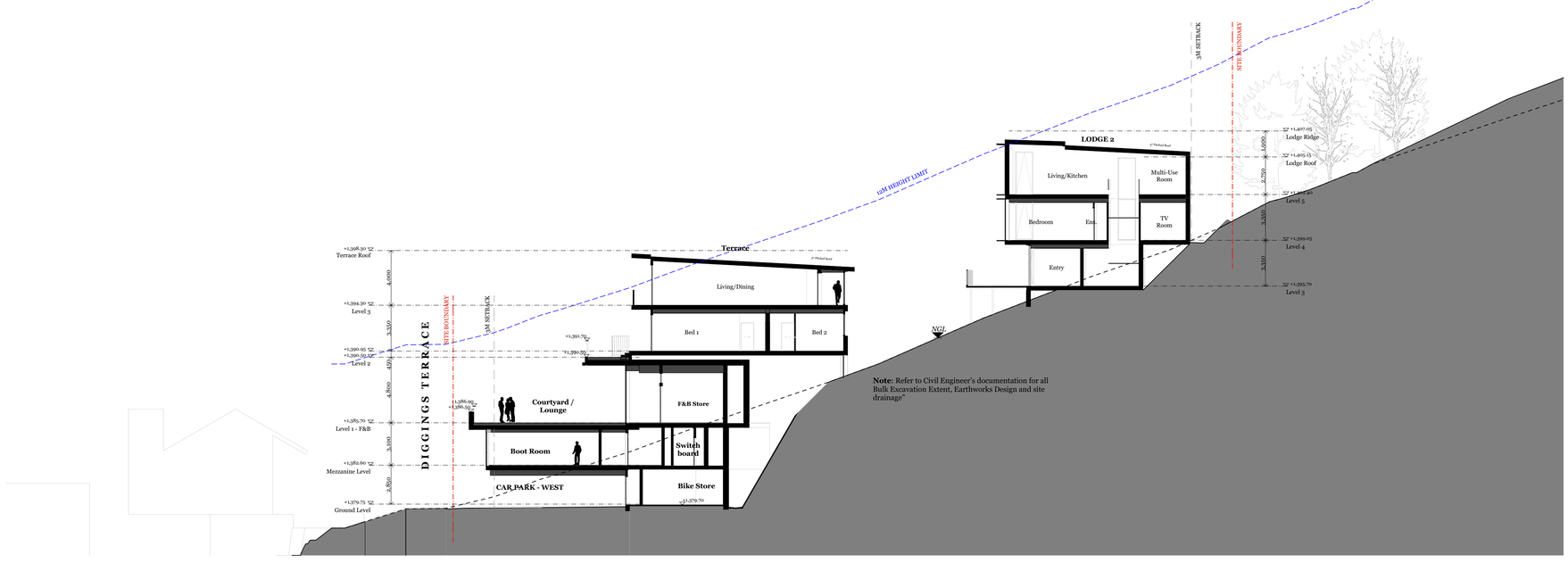
Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Sections - Sheet 2
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA304
		Revision	A





SECTION 1





SECTION 2

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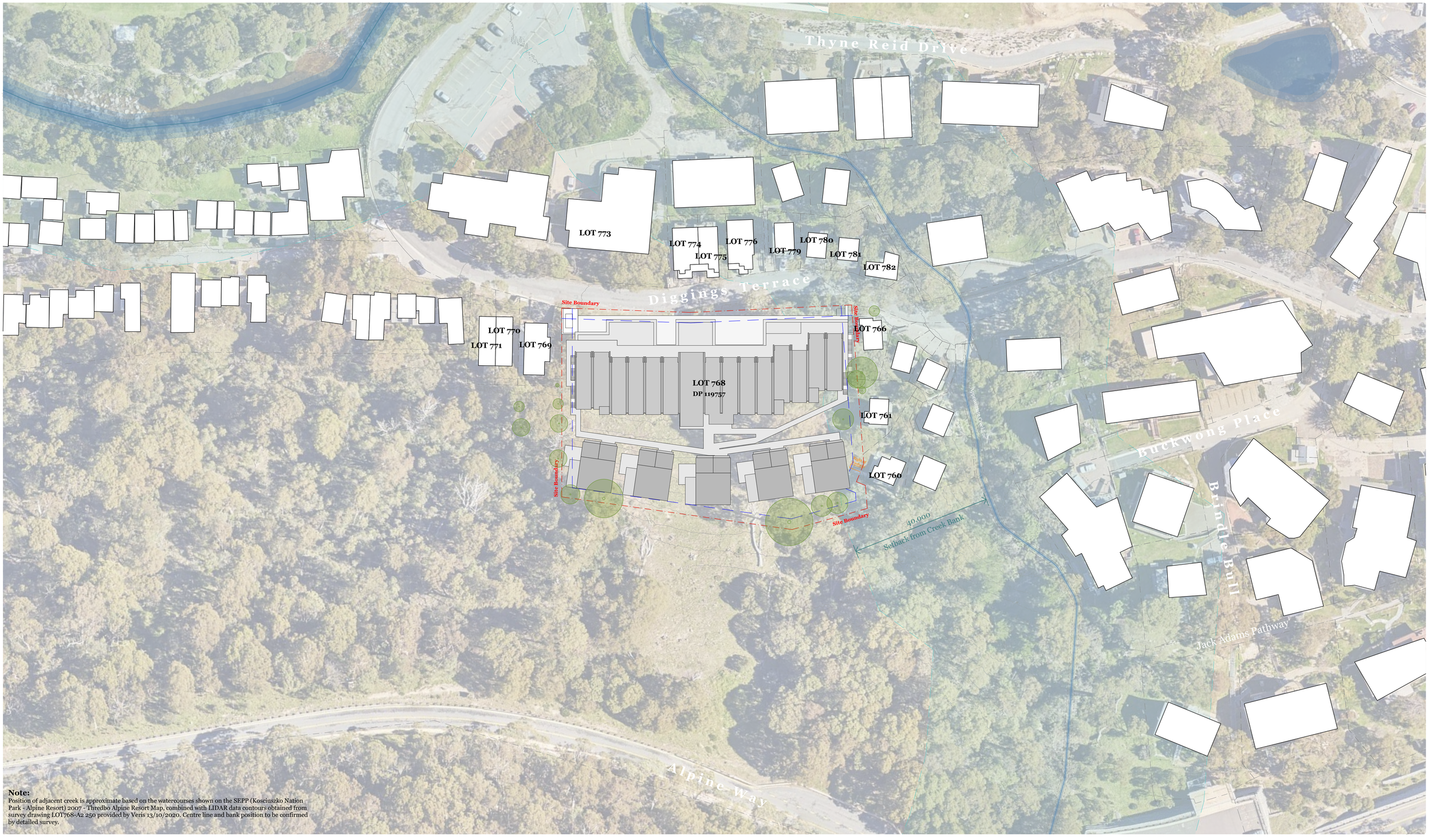
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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Sections - Sheet 1
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA303
		Revision	A



Note:
Position of adjacent creek is approximate based on the watercourses shown on the SEPP (Kosciuszko Nation Park - Alpine Resort) 2007 - Thredbo Alpine Resort Map, combined with LIDAR data contours obtained from survey drawing LOT768-A2 250 provided by Veris 13/10/2020. Centre line and bank position to be confirmed by detailed survey.

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0 10 20 30 40 50m

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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Site Plan
		Scale	1:500 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA101
		Revision	A



Note: Refer to Civil Engineer's documentation for all Bulk Excavation Extent, Earthworks Design and site drainage"

INTERNAL NORTH ELEVATION



Note: Refer to Civil Engineer's documentation for all Bulk Excavation Extent, Earthworks Design and site drainage"

INTERNAL SOUTH ELEVATION



EF-01
Stone
Grey colour or similar



EF-02
Off Form Concrete



EF-03
Metal
Matte dark bronze colour or similar



EF-04
Metal
Matte dark grey or similar



EF-05
Metal
Matte black colour or similar



EF-06
Perforated Metal
Matte black colour or similar



EF-07
Clear glazing

EF-08
Timber

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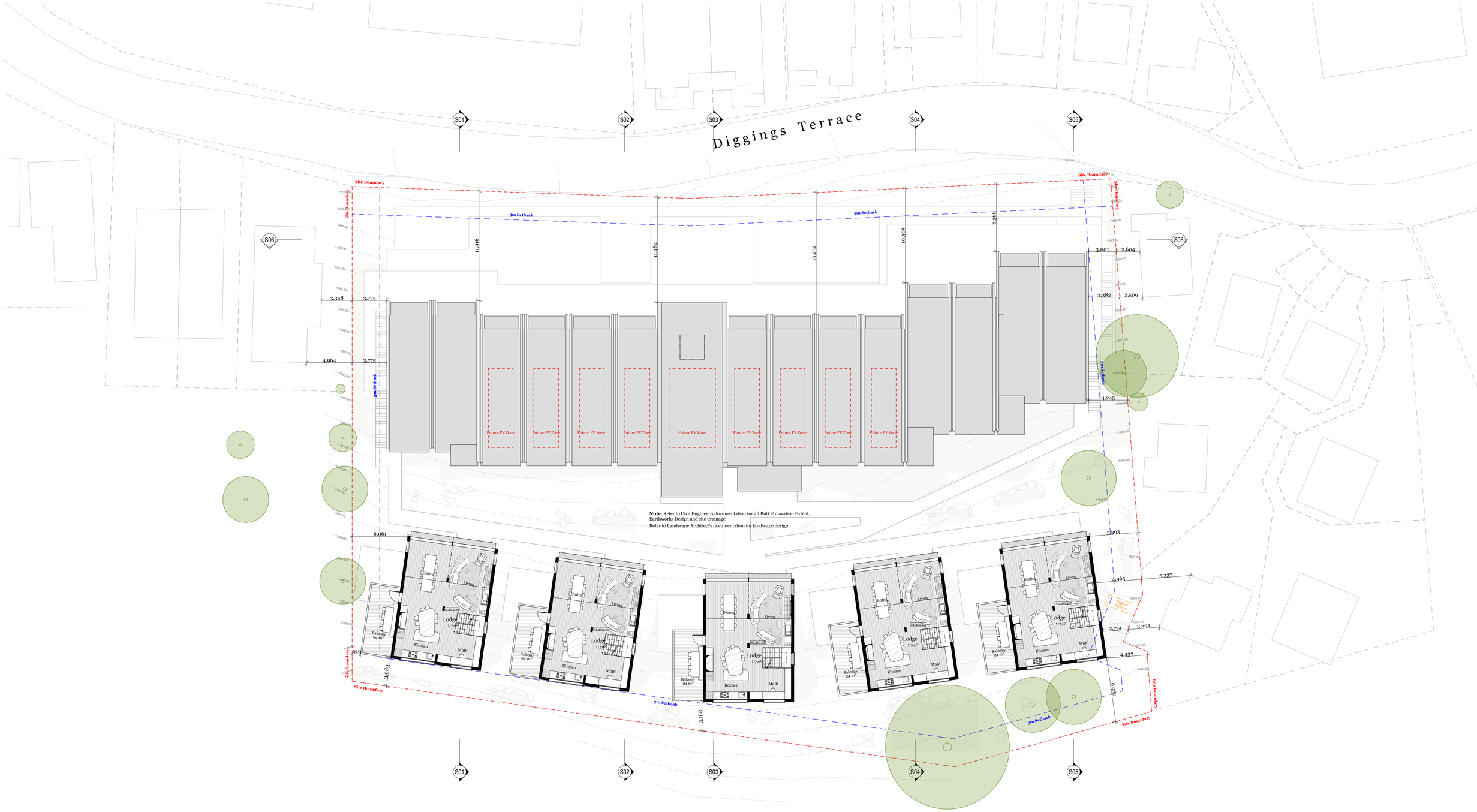
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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Elevations - Sheet 2
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA301
		Revision	A



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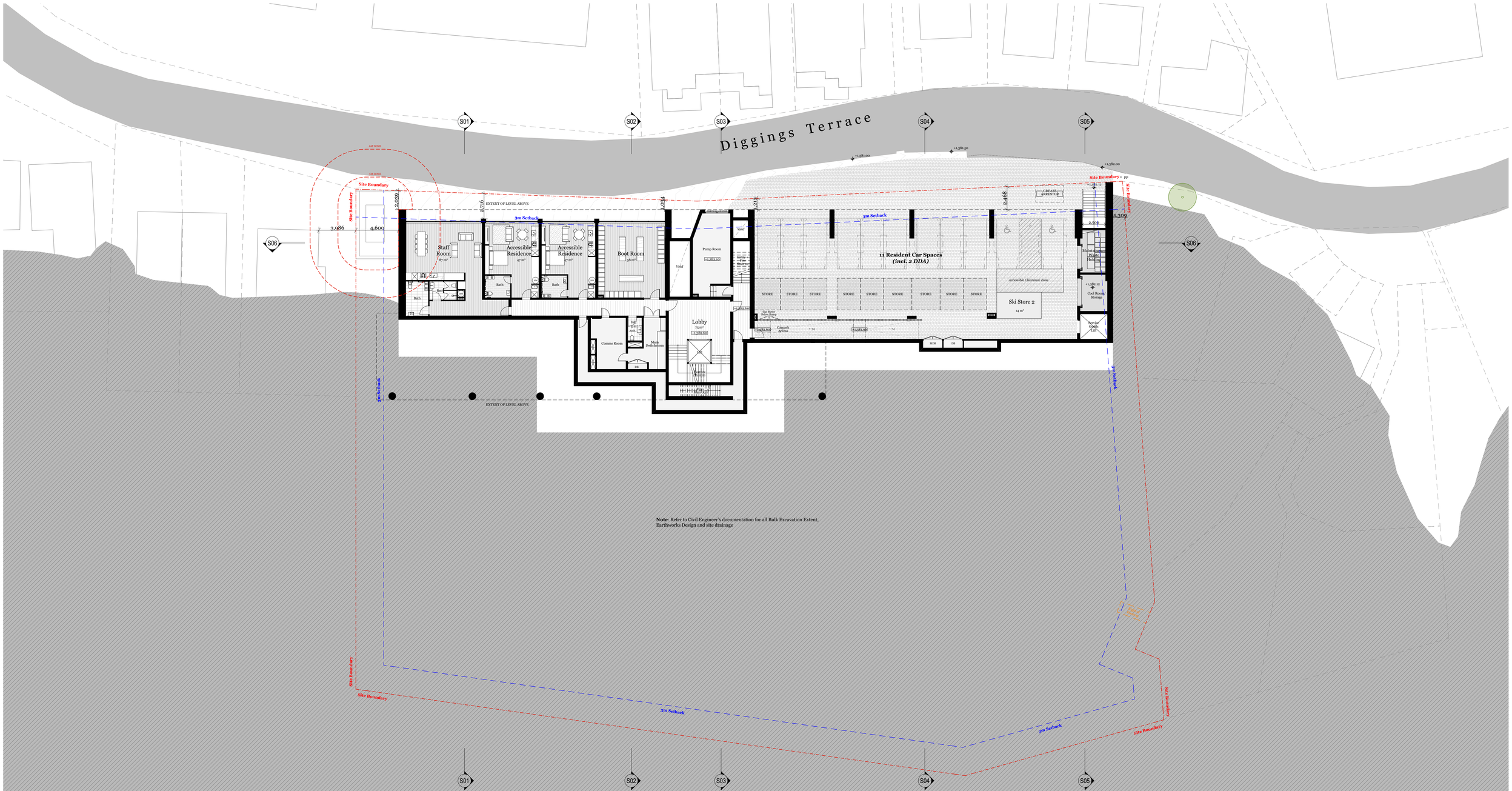
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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Level 5
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA206
		Revision	A



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David Randerson 8542

Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Mezzanine
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA201
		Revision	A



NORTH ELEVATION



SOUTH ELEVATION



EF-01
Stone
Grey colour or similar



EF-02
Off Form Concrete



EF-03
Metal
Matte dark bronze colour or similar



EF-04
Metal
Matte dark grey or similar



EF-05
Metal
Matte black colour or similar



EF-06
Perforated Metal
Matte black colour or similar



EF-07
Clear glazing

EF-08
Timber

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0 4 8 12 16 20m

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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Elevations - Sheet 1
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA300
		Revision	A

Diggings Terrace

S01 S02 S03 S04 S05 S06

Site Boundary

3m Setback

11,916 11,484 13,252 10,305 7,368

3,348 3,775 4,964 3,775

6,661 4,178 3,680

3,001 2,604 3,382 2,509 4,245

5,293 4,965 5,337 3,774 3,393 4,432 2,879 3,168

Future PV Zone

Bed 1 Bed 2 Bed 3 Bath Kids/TV Room Lodge 112 m²

Note: Refer to Civil Engineer's documentation for all Bulk Excavation Extent, Earthworks Design and site drainage
Refer to Landscape Architect's documentation for landscape design

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Rev.	Date	By	Ckd	Description
A	7/07/2022	NT	MR/SO	For DA Submission

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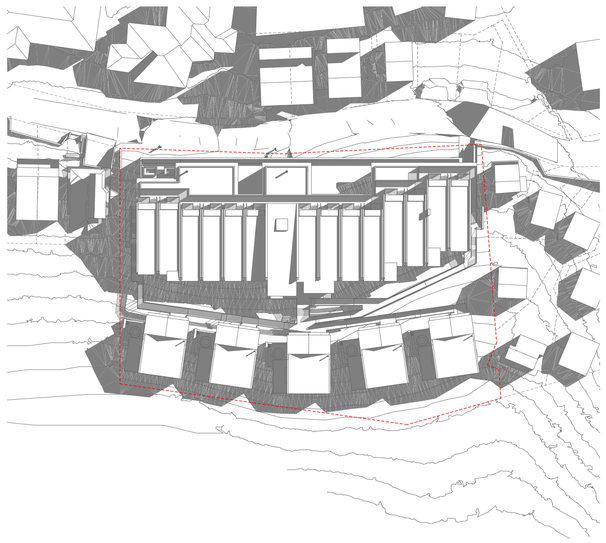
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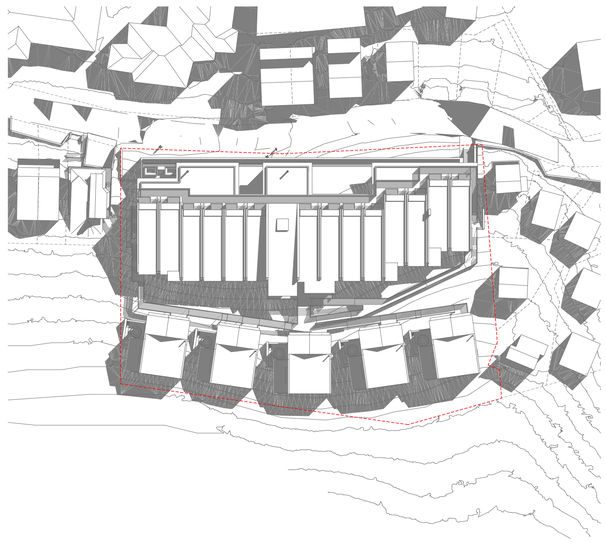
Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Level 4
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA205
		Revision	A



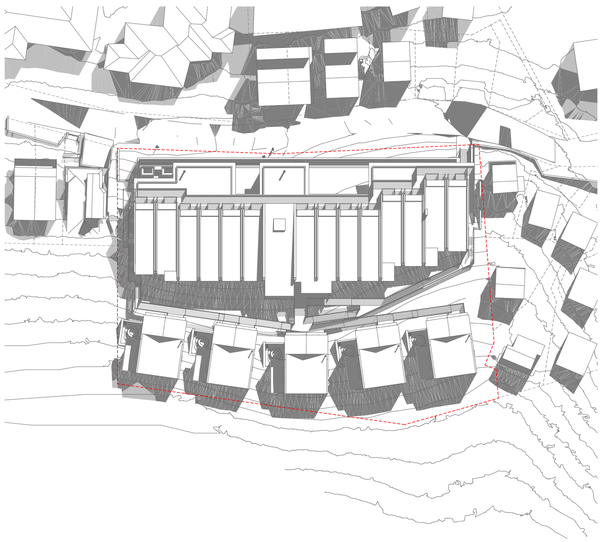
21 June - 9 am



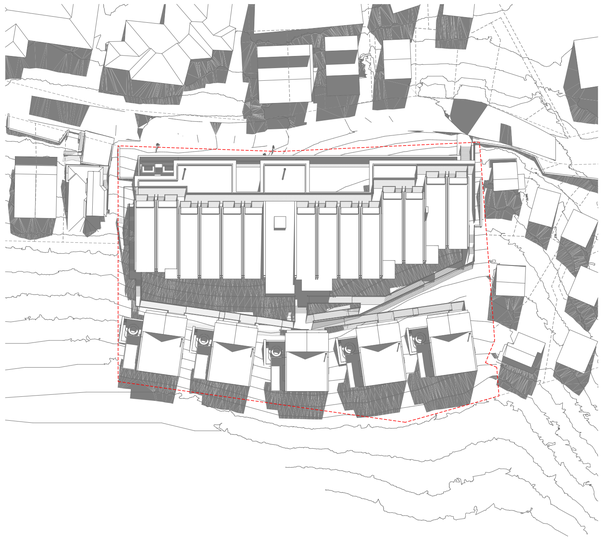
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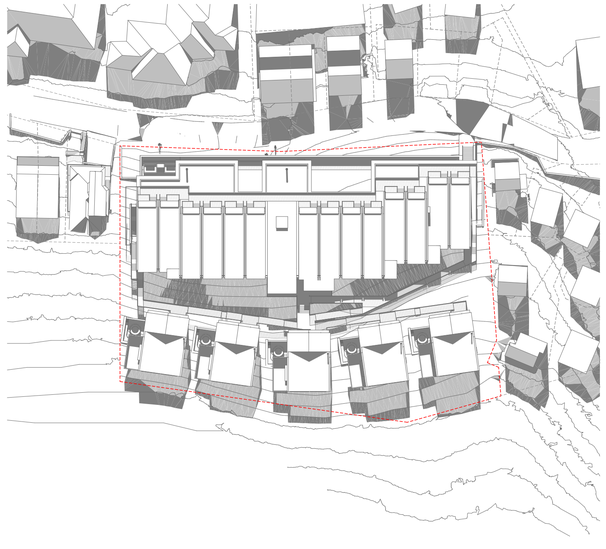
21 June - 11 am



21 June - 12 pm



21 June - 1 pm



21 June - 2 pm



21 June - 3 pm

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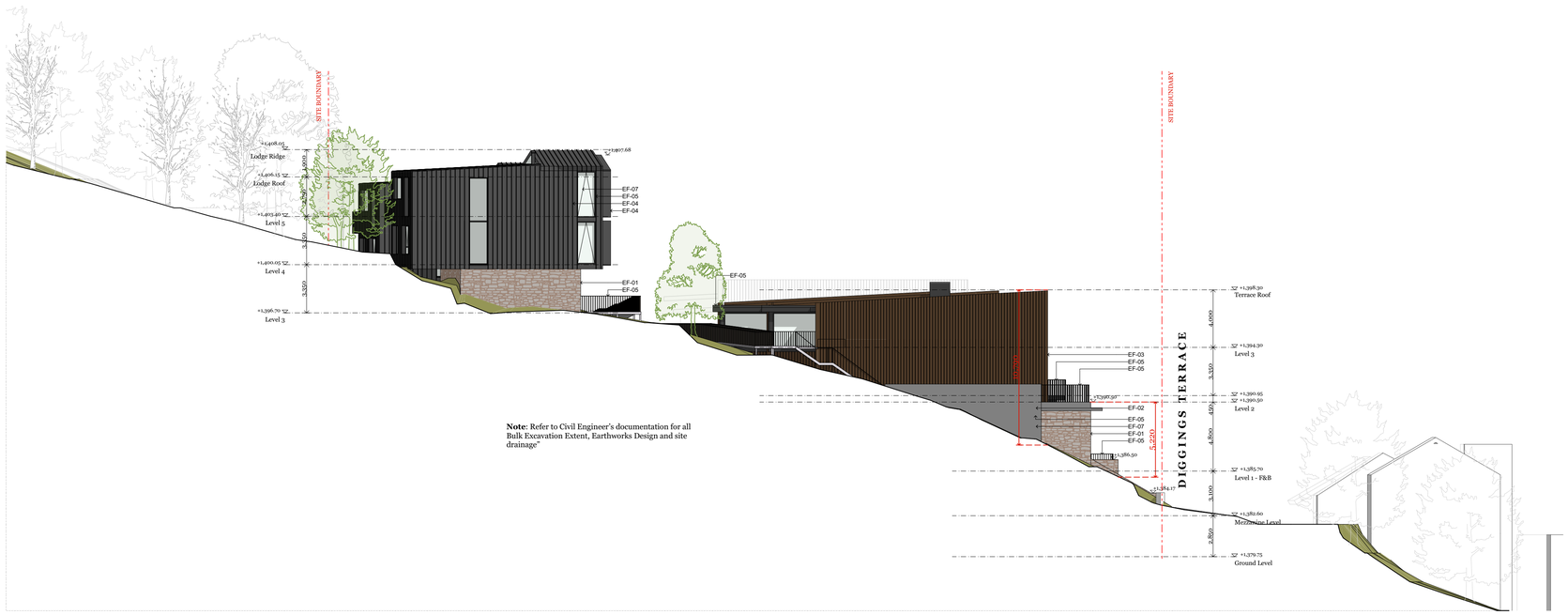
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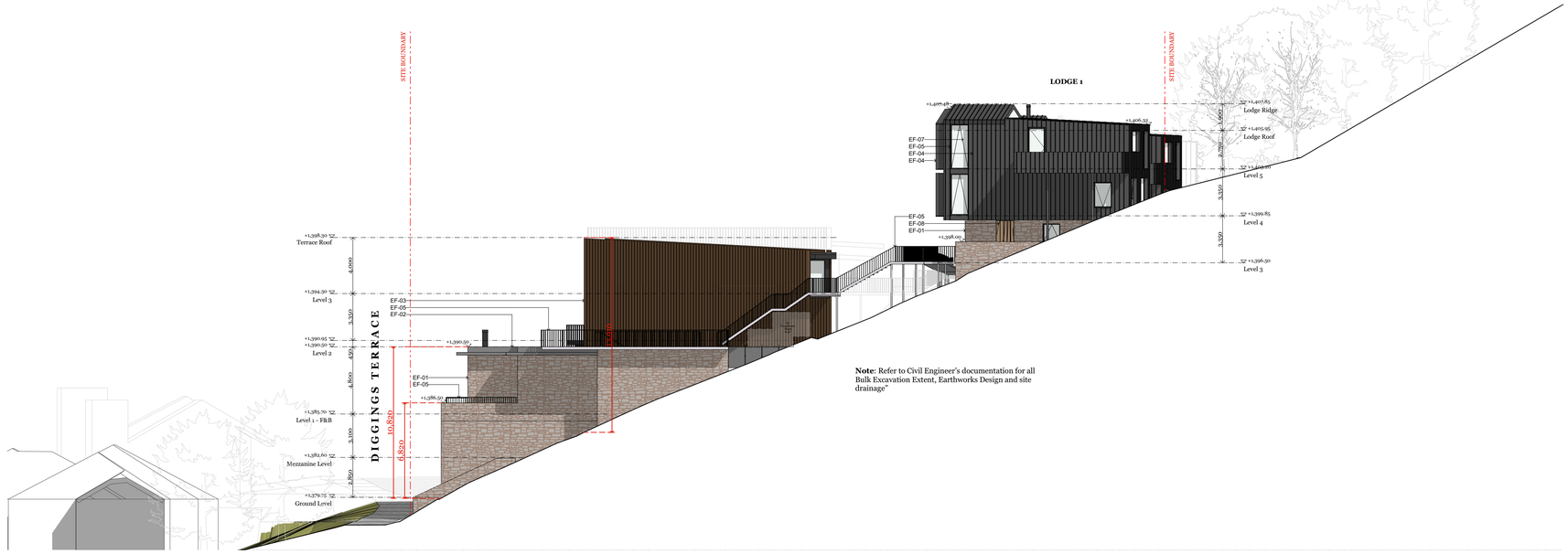
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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Shadow Diagrams
		Scale	1:700 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA400
		Revision	A



Note: Refer to Civil Engineer's documentation for all Bulk Excavation Extent, Earthworks Design and site drainage"

EAST ELEVATION



Note: Refer to Civil Engineer's documentation for all Bulk Excavation Extent, Earthworks Design and site drainage"

WEST ELEVATION



EF-01
Stone
Grey colour or similar



EF-02
Off Form Concrete



EF-03
Metal
Matte dark bronze colour or similar



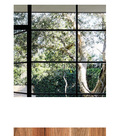
EF-04
Metal
Matte dark grey or similar



EF-05
Metal
Matte black colour or similar



EF-06
Perforated Metal
Matte black colour or similar



EF-07
Clear glazing



EF-08
Timber

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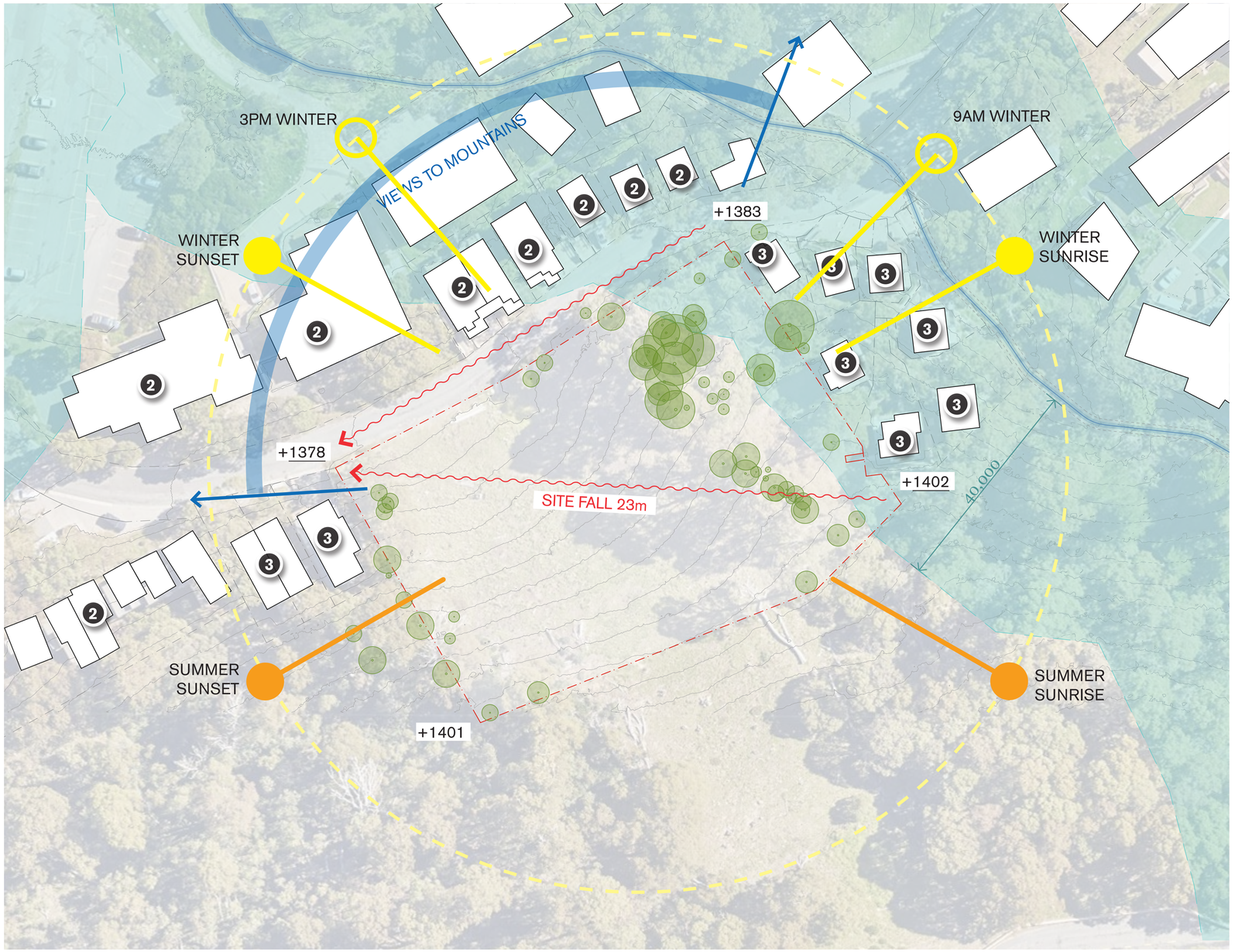
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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Elevations - Sheet 3
		Scale	1:200 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA302
		Revision	A

SITE ANALYSIS

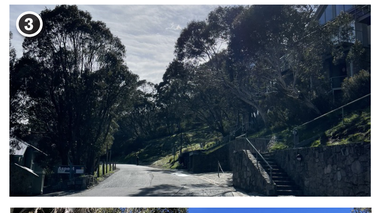


Note:
Position of adjacent creek is approximate based on the watercourses shown on the SEPP (Kosciuszko Nation Park - Alpine Resort) 2007 - Thredbo Alpine Resort Map, combined with LIDAR data contours obtained from survey drawing LOT768-A2 250 provided by Veris 13/10/2020. Centre line and bank position to be confirmed by detailed survey.

SITE PHOTOS













KEY



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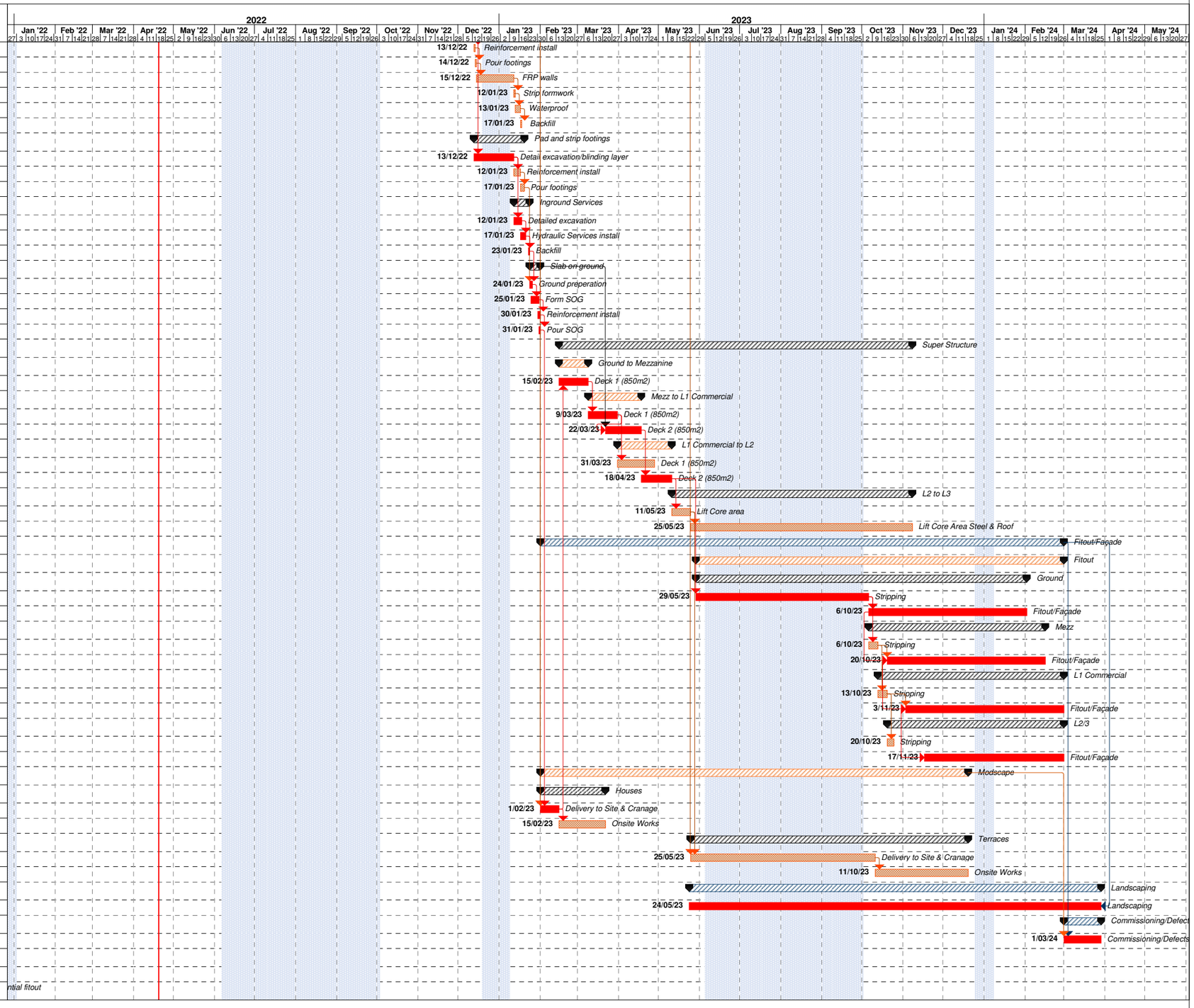
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Project Name	Thredbo - Lot 768	Project Number	12656
Project Address	Diggings Terrace, Thredbo, NSW 2625	Drawing Name	Site Analysis
		Scale	1:0.52, 1:1.05, 1:1.06 @ A1
		Date	June 2022
Client	Le Hunte Properties	Drawing Number	DA100
		Revision	A

THREDBO LOT 768

ConstructionControl

ID	Task Name	Dur	Start	Finish
61	Reinforcement install	1 d	Tue 13/12/22	Tue 13/12/22
62	Pour footings	1 d	Wed 14/12/22	Wed 14/12/22
63	FRP walls	5 d	Thu 15/12/22	Wed 11/01/23
64	Strip formwork	1 d	Thu 12/01/23	Thu 12/01/23
65	Waterproof	2 d	Fri 13/01/23	Mon 16/01/23
66	Backfill	1 d	Tue 17/01/23	Tue 17/01/23
67	**Pad and strip footings**	**13 d**	**Tue 13/12/22**	**Thu 19/01/23**
68	Detail excavation/blinding layer	7 d	Tue 13/12/22	Wed 11/01/23
69	Reinforcement install	3 d	Thu 12/01/23	Mon 16/01/23
70	Pour footings	3 d	Tue 17/01/23	Thu 19/01/23
71	**Inground Services**	**8 d**	**Thu 12/01/23**	**Mon 23/01/23**
72	Detailed excavation	4 d	Thu 12/01/23	Tue 17/01/23
73	Hydraulic Services install	4 d	Tue 17/01/23	Fri 20/01/23
74	Backfill	1 d	Mon 23/01/23	Mon 23/01/23
75	**Slab on ground**	**4 d**	**Tue 24/01/23**	**Tue 31/01/23**
76	Ground preperation	2 d	Tue 24/01/23	Wed 25/01/23
77	Form SOG	2 d	Wed 25/01/23	Mon 30/01/23
78	Reinforcement install	2 d	Mon 30/01/23	Tue 31/01/23
79	Pour SOG	1 d	Tue 31/01/23	Tue 31/01/23
80	**Super Structure**	**97 d**	**Wed 15/02/23**	**Tue 7/11/23**
81	**Ground to Mezzanine**	**16 d**	**Wed 15/02/23**	**Wed 8/03/23**
82	Deck 1 (850m2)	16 d	Wed 15/02/23	Wed 8/03/23
83	**Mezz to L1 Commercial**	**25 d**	**Thu 9/03/23**	**Mon 17/04/23**
84	Deck 1 (850m2)	16 d	Thu 9/03/23	Thu 30/03/23
85	Deck 2 (850m2)	16 d	Wed 22/03/23	Mon 17/04/23
86	**L1 Commercial to L2**	**25 d**	**Fri 31/03/23**	**Wed 10/05/23**
87	Deck 1 (850m2)	16 d	Fri 31/03/23	Thu 27/04/23
88	Deck 2 (850m2)	16 d	Tue 18/04/23	Wed 10/05/23
89	**L2 to L3**	**40 d**	**Thu 11/05/23**	**Tue 7/11/23**
90	Lift Core area	10 d	Thu 11/05/23	Wed 24/05/23
91	Lift Core Area Steel & Roof	30 d	Thu 25/05/23	Tue 7/11/23
92	**Fitout/Façade**	**176 d**	**Wed 1/02/23**	**Thu 29/02/24**
93	**Fitout**	**97 d**	**Mon 29/05/23**	**Thu 29/02/24**
94	**Ground**	**77 d**	**Mon 29/05/23**	**Thu 1/02/24**
95	Stripping	5 d	Mon 29/05/23	Thu 5/10/23
96	Fitout/Façade	72 d	Fri 6/10/23	Thu 1/02/24
97	**Mezz**	**82 d**	**Fri 6/10/23**	**Thu 15/02/24**
98	Stripping	5 d	Fri 6/10/23	Thu 12/10/23
99	Fitout/Façade	72 d	Fri 20/10/23	Thu 15/02/24
100	**L1 Commercial**	**87 d**	**Fri 13/10/23**	**Thu 29/02/24**
101	Stripping	5 d	Fri 13/10/23	Thu 19/10/23
102	Fitout/Façade	72 d	Fri 3/11/23	Thu 29/02/24
103	**L2/3**	**82 d**	**Fri 20/10/23**	**Thu 29/02/24**
104	Stripping	3 d	Fri 20/10/23	Tue 24/10/23
105	Fitout/Façade	62 d	Fri 17/11/23	Thu 29/02/24
106	**Modscape**	**137 d**	**Wed 1/02/23**	**Tue 19/12/23**
107	**Houses**	**35 d**	**Wed 1/02/23**	**Tue 21/03/23**
108	Delivery to Site & Cranage	2 wks	Wed 1/02/23	Tue 14/02/23
109	Onsite Works	5 wks	Wed 15/02/23	Tue 21/03/23
110	**Terraces**	**60 d**	**Thu 25/05/23**	**Tue 19/12/23**
111	Delivery to Site & Cranage	2 wks	Thu 25/05/23	Tue 10/10/23
112	Onsite Works	10 wks	Wed 11/10/23	Tue 19/12/23
113	**Landscaping**	**120 d**	**Wed 24/05/23**	**Thu 28/03/24**
114	Landscaping	120 d	Wed 24/05/23	Thu 28/03/24
115	**Commissioning/Defects/COU**	**20 d**	**Fri 1/03/24**	**Thu 28/03/24**
116	Commissioning/Defects/COU	4 wks	Fri 1/03/24	Thu 28/03/24
117	**Typical Structure Study**	**46 d**	**Mon 2/08/21**	**Wed 6/10/21**
235		1 d	Mon 2/08/21	Mon 2/08/21
236	**Typical Residential fitout**	**72 d**	**Mon 2/08/21**	**Thu 11/11/21**



Milestone
Complete Milestone
Project Summary
Project Summary progress
Summary
Summary T4
H1 Project Summary Progress
H2 Summary progress
Critical Task
Non-critical
Progress
Rolled up
Rolled up progress

Ben Eddy